



BROOK TAYLOR, L.L.D. & R.S.S. 1714.

*From an Original Picture in the Possession
of Lady Young.*



Engraving by

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*From an Original Picture in the Possession
of Lady Young.*

6249.4

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CONTEMPLATIO PHILOSOPHICA:
A POSTHUMOUS WORK,

OF THE LATE

BROOK TAYLOR, L.L.D. R.R.S.

SOME TIME SECRETARY OF THE ROYAL SOCIETY.

TO WHICH IS ADDED

A LIFE OF THE AUTHOR.

BY RICHARDSON,

SIR WILLIAM YOUNG, BART. F.R.S. A.S.S.

WITH

AN APPENDIX,

CONTAINING

*Sundry original Papers, Letters from the Count D'Orvillier de Montmort,
M. de la Lande, M. de l'Isle, M. Bernoulli, &c.*

*Habemus periculum quodcumque acutum inquinamus semper usi-
sumus: quip secundis relata dilectionem modo habere
videbatur; nunc, etiam si sitem.*

Ciceron, Epist. 12. Lib. 6.

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LONDON:

PRINTED BY W. BOLME ADJ. W.

Shakespeare Printing-Office,

1793.

EDWARD TAYLOR. LONDON. 1714.

*From an Original Drawing in the Library
of the Royal Society.*

By R. Young.

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Not Published.

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~~H.~~ SOME TIME SECRETARY OF THE ROYAL SOCIETY.

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BY HIS GRANDSON,

SIR WILLIAM YOUNG, BART. F.R.S. A.S.S.

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AN APPENDIX,

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Lord Bolingbroke, Marcilly de Villette, Bernouilli, &c.*

Est unum perfugium doctrina ac literæ, quibus semper usi
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videbantur; nunc, etiam salutem.

Ciceron. Epist. 12. Lib. 6.

LONDON:

PRINTED BY W. BULMER AND CO.

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TO WILLIAM SEWARD, ESQ.

Huntercombe.

January 1st, 1793.

DEAR SIR,

THREE years have passed since you applied to me for an account of the Life and Writings of my Grandfather, Brook Taylor, on a requisition having been made to you by some of the French Academy, that you would make inquiries relative to the Memoirs of that able and learned Mathematician.

Various avocations, in the first instance, prevented me complying with your request. A request, however, made by one I so much esteem and regard, could never be by me wholly forgotten, or neglected. Undertaking a voyage across the Atlantic, in 1791, I took with me the few papers or letters of Brook Taylor, which have been preserved, with determination of applying the leisure

which the voyage might afford, in selecting and arranging such materials, as might best answer your purpose of information; and as the readiest way of communicating that information, I transmit them to you in print. I am ever, dear Sir, on the best foundations of affection and esteem,

Your faithful friend and servant,

W. YOUNG.

AN
INTRODUCTION
TO THE
LIFE OF BROOK TAYLOR, L. L. D.
R. S. S. &c.

BIOGRAPHY, taken in its narrow and proper acceptation, seems to be ill applied, and to lose much of its essential interests, its use, and its amusement, when engaged in the barren service of *men of letters*. A few stories of ingenuity in early youth, of premature talents, and of their early application to some branch of science, form the first set of scanty materials. At a more advanced period of life, we are told of literary disputes, of compliments between students in the same class, and of friendships and of enmities which go no

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further than paper-love, and paper-war; and these fill up the ordinary measure of their days.

This sameness, this still-life, so unfit for public representation, appears a necessary result from a first principle, in addition to its confirmation from facts, and from example. The habits incidental to the vocation of authors, generally at least, preclude variety in themselves, their inmates, or their intercourse with the world. Their lives must, in some measure, assume the character of their studies; and as those studies, with rare exception, are confined to one branch of literature, and at any rate imply constant and recluse application, such character must be uniform; and ill suited to extend our inferences in practical ethics, or to gratify our fancies and ingratiate our affections, by a new and more interesting relation to the ordinary career of society and business.

Yet we find that the memoirs of literary men fill many a page, not only in prefaces to

their books, but in detached works of laborious research; and usurp a full and dull moiety in every biographical compilation, down to the present day.

Divines, who actually believed in God, and physicians who really studied physic, and other good and scientific persons, are thus recommended to our special notice, separately and in contradistinction to their works:—as if, independent of the merits of these,—as if merely to have “*written and read*” under a new kind of benefit of clergy, conferred an exemption from the sentence of oblivion passed by the reason and justice of ages on those who cannot, in their intercourse with society, afford one document of history, or of useful example, as distinguished from other men.

This perversion of biography is not, however, extraordinary. It is natural enough that authors should write about authors; and seek to establish a claim on the retributive justice of their fraternity, for their own reputation with after times. It is natural too, that

those who write, should, from various motives, read the memoirs of those who have written. We need not deeply investigate human nature on this subject in order to account for the many learned '*lives without adventures*' which are daily published.

There are, however, memoirs of authors (and merely as authors) which bear a very different description, and are of a great and superior interest in the republic of letters. Such are those writings, which in delineating one learned man, personify, as it were, *learning itself*; and take up a recital of its origin, growth, course, and success, in all its conflicts with error, and under all its alliances with genius, throughout a literary world, and in an enlightened period of its career.

Memoirs of this sort are interesting and useful indeed; are worthy the pen of a philosopher as Bayle, and dignify the first powers of intellect and of knowledge, when exerted in a manner becoming the undertaking.

The life of the individual, for which I have

engaged to supply little more than domestic materials, would, if taken as it ought to be, in an enlarged consideration of the subject matter, afford ample scope to the most ingenious mind, and most extensive acquirements in the highest course of science.

Brook Taylor moved in, and adorned, that circle of luminaries, who, in the beginning of this eighteenth century, threw a new and clear light on the operations of nature, and on the mind of man: he was the friend of Keil, of Halley, of Newton; he was an expositor of his sublime philosophy to foreign nations, and an able defender of his pretensions and tenets against Leibnitz and the Bernouilli: he was an acute refuter of the over-refined metaphysics of Mallebranche, and of the grosser mechanisms of the German school.

To write the memoirs of such a man in the way which I have pointed out (and which is the true and only way in which they should be written), would require a perfect knowledge of the higher mathematics,

and of every step of human invention towards facilitating or confirming the inferences of the Newtonian philosophy. The human intellect should be followed *pari passu* in its highest range, accompanied by its *satellites* furnishing every detail of expedient, and of mechanism, which patient and penetrating calculation might supply.

Whatever habits of reading I may possess, have been turned to other branches of literature;—and in truth I must declare myself, on every account, incompetent to pursue such arduous course of inquiry,—and follow, describe, and illustrate the lofty career of genius which belonged to these times. I propose merely to supply some dates, some names, some land-marks to note the place of investigation, should any one of more congenial studies accept my invitation to engage and build on the foundations which I venture to mark out. In addition to this, I shall transcribe a few original letters, which may tend to display the temper and accomplishments of the

eminent person in question, and shew a philosopher in the circles of friendship and gallant courtesy—equally endeared to a Bolingbroke and to a Marcilly de Villette.

If some of the few original materials which I thus adduce, should appear irrelevant to the particular life of which I offer the sketch; I think I might gain excuse from the reader, by appealing to the curiosity satisfied, or entertainment received, from a perusal of any, or all of the letters liable to this objection. But in lieu of apology, I shall suggest some observations on the inference to be drawn from these papers, and which may render apology unnecessary.

To me they seem to afford a distinguishing characteristic of the learning and of the learned men of those times. They shew that knowledge then bore no gloom of solitude in its face—no pallid reflection of the lamp: they are in proof, that the manners of literary men, in that enlightened period of lively wit, combined with intellectual exercise of the

most sublime faculties of our nature,—were neither affected by pedantry, or by presumption; and that these are not necessarily a result of literary accomplishment, even in the most operose and abstracted course of study.

Science thus rendered amiable by the conduct of its professors (who in elevating their minds, carried therewith and exalted the affections and the pleasures too of life), found its way into the closets of fine ladies, and into the cabinets of kings. Philosophy too on its own account was welcomed in a manner novel and extraordinary, by all persons of all pretensions. The human mind seemed, throughout its various classes of distinction, to take a new pride, and elate on the penetrations of a Newton. The poet, the historian, the moralist, felt each *as man*; and claiming to their nature something more than it had ever yet possessed, at least on proof, they proudly blended a reference to the sublime discoveries of the celestial system, with each display of their genius, or of their learning. *Urania* thus shook

hands with each sister muse; and was herself the interesting muse of all. In a sonnet from the lively, yet learned mathematician, the Count Raymond de Montmort—‘the god of love takes the seat of heavenly *attraction*, in order to rectify the errors and repair the ruin of Phaeton’s management :’ the poetical compliment is made to Newton, as rectifying the errors of Descartes; but furthermore, with a kind of astronomical gallantry, well suited to a Frenchman *of those days*, the metaphor introduces the master of the heart, as controuling the universe.

In perusing the papers alluded to, we have yet other and new matter of reflection; whilst amongst the gay and great, we see a king of France, and princess of Wales, zealous in the discussion of literary pretensions. In those times, the potentates of the earth seem to have considered a share in the victories of the human mind as conferring a glorious wreath on the sovereign’s brow. They seem to have contested, on part of their respective subjects, a new dis-

covery in mathematics, as they would the appropriation of a new region of the globe, and a new field of command and of commerce. On one occasion, mentioned in a letter annexed, from the illustrious Abbé Conti, we are told that the representatives of every crowned head in Europe, the collective ambassadors and envoys at Paris met, on special summons, to decide the merits of pretension to an invention of subordinate class, disputed by Sir Isaac Newton and Leibnitz.

These, and like matters, afford curious subject of inquiry and speculation, proper to a comprehensive memoir of the times alluded to. Such memoir will require materials of a very inferior kind, but yet indispensable to the undertaking. These, and little more than these, I profess to supply in part, from family papers, relating to the life of my grandfather, Brook Taylor.

BROOK TAYLOR was born at Edmonton, August 18, 1685. He was the son of John Taylor, Esq. of Bisfrons House, in Kent, by Olivia, daughter of Sir Nicholas Tempest, of Durham, Baronet.

Before I enter into particulars of the life of Brook Taylor, it is necessary, in order to do justice to the amiable character of that very accomplished man, that I should state some preliminary circumstances, which may account for the ill terms he was on with his father, as intimated in the letters of Lord Bellingbroke, and of the Count Raymond de Montmort; and in doing this, I must revert to the character of the father, John Taylor.

John was the son of Nathaniel, of puritanical memory; who, as appears from a diary, penned in his own hand writing, from 1646

to 1662, was one of those who (in his own phrase) “*tugged and wrestled with the Lord in prayer;*” and whom Cromwell thought fit to ‘*elect by a letter,*’ dated June 14, 1653, to represent the county of Bedford in parliament. I cannot pass over this circumstance without so far digressing, as to observe, that Howell the historiographer, in his little treatise on Parliaments, entitled *Philanglus*, and dedicated to the Protector in the year 1656, was correct in stating the representation of the boroughs, not to be equally under the controul of Cromwell, with the returns of counties; and further to remark, that Lord Clarendon appears to have been ignorant of the practice of Cromwell, when he recommended a theory touching a reform of the Commons House, by addition of county members, on such loose premises, as the despotic example of that usurper. As to the theory itself, the diary of my ancestor, the pious Nathaniel, is in proof with many other documents of those times, that an

accession of county members is not in itself, or necessarily, a good reform of parliament.

In the diary above cited, an entry is made by my great grandfather John, stating his father Nathaniel to have died, Jan. 15, 1683; in a previous page, I find that John Taylor was born in the year 1655. John having attained his twenty-seventh year at the time of his father's death, was old enough '*acta parentum jam legere;*' and from the circumstances of the times, as connected with the prejudices of his family, was not likely to have read much else. It appears, at least, that he had adopted the austere outside, if not the interior light of the fanatical Nathaniel. Whatever government he favoured abroad, it was absolute government he preferred at home. His numerous children, and all who depended on him, were habituated to the strictest forms of reverence and submission. Domestic endearments unbended to no relaxation from ceremony throughout the day. The patriarch was always on his throne. The father sought not

a display of his affections, but of his authority. Above all, it was deemed repugnant to that authority, for any child to venture a difference of sentiment; and as a jealousy of dissentient opinions must ever be aggravated by a superior character in him who presumes to dissent, we are not to wonder if we find such a father disaffected at times, even to such a son as Brook Taylor.

One charm of society—that charm, “which softens rocks, and bends the knotted oak,” happily engaged the domestic circle at Bifrons. The morose temper of John Taylor yielded to the powers of music. Its most eminent professors, Lully, Couperon, Babel, Gemini-ani latterly, and others, were courteously solicited and most hospitably welcomed to his house. In a family where all were accustomed to watch the very look of the master, it was natural that his children should seek to ingratiate themselves by application to his favourite accomplishment, so delightful too in itself. His numerous family were generally

proficient in music, but the domestic hero of the art was the subject of this memoir. In a large family picture, he is represented, at the age of thirteen, sitting in the centre of his brothers and sisters, the two elder of whom, Olivia and Mary, crown him with laurel, bearing the insignia of harmony. Accomplishment in another elegant art graced the early youth of Brook Taylor. His drawings and paintings, preserved in our family, require not those allowances for error or imperfection with which we scan the performances of even the superior *dilettanti* :—they will bear the test of scrutiny and criticism from artists themselves, and those of the first genius and professional abilities. But I may with more propriety advert to the excellence of Brook Taylor in the art of design, when I come to that period of his life in which he published his very learned treatise ‘ *on Linear Perspective*. ’

Having cursorily spoken of the acquirements in the polite arts, which graced the early

youth of Brook Taylor, I can only add on the subject of classic learning, that he was educated at home, under the tuition of the Rev. Mr. Sacchette; and that it is to be presumed, his proficiency in the ordinary branches of languages and mathematics was great, from his having been deemed qualified for the university at the early age of fifteen.

In the year 1701 Brook Taylor was entered a fellow commoner at St. John's college in Cambridge, and was placed under the tuition of Mr. Bowtell. At that period mathematics engaged more particularly the attention of the university; and the examples of eminence in the learned world, derived from that branch of erudition, attracted the notice, and roused the emulation of every youth possessed of talents and of application. We may presume that Brook Taylor, from the very hour of his admission at college, adopted the course of study which a Machin, a Keil, and above all, a Newton had opened to the mind of man, as leading to discoveries of the celestial system.

The means which facilitated the acquirement of knowledge, or which ascertained the result; which pursued the gradations, or which accomplished the ends of science in relation to this sublime subject, were fit objects of ambition to the brightest genius, and to the strongest intellect. That Brook Taylor applied early to these studies, and without remission, is to be inferred from the early notice and kind attention with which he was honoured by these eminent persons; and from the extraordinary progress which he made in their favourite science. We soon find him an adept in all that was to be learned from others; and engaged in the engrafting his original ideas on what had been suggested or proved. In the making an application of his studies, he shewed his genius to be as extraordinary, as his inquiries had been well directed, penetrating, unremitting, and conclusive. Early as 1708, he wrote his treatise “*On the Centre of Oscillation*,” as appears from a letter to professor Keil; though that essay did not appear

in the Philosophical Transactions until some years afterwards. In the year 1709, he took his degree of bachelor of laws. In the year 1712, he was chosen a fellow of the Royal Society. During this period of three years he displayed a caution and self-distrust characteristic of the genuine mathematician. Possessed of all that might be deemed necessary to ascertain or to direct his course, he yet launched not with young ambition into the wide seas of literature; but previous to the undertakings which his mind had planned, he exercised his skill and acquirements in private communications and discussions. The few of his letters, preserved and written to professor Keil, during the interval from 1709 to 1712, treat of the most abstruse subjects of algebraic and mathematical disquisition. In particular, I possess one letter, dated July 16, 1712, addressed to Mr. Machin, containing at length *a Solution of Kepler's Problem, and marking the Use to be derived from that Solution.*

He was now become, and justly become,

confident of his strength, and ventured forth a competitor for literary fame, in agitation of those points of knowledge, which engaged much of the genius and most of the learning then flourishing in Europe. June the 25th, 1712, he presented his first paper to the Royal Society—“*On the Ascent of Water between two Glass Planes;*”—his second production, “*On the Centre of Oscillation,*” was read in July;— his third, “*On the Motion of a stretched String,*” was read in September of same year. By a letter to professor Keil, dated July 13, 1713, it appears that Brook Taylor had presented to the Royal Society a paper of that date on his favourite subject “*of Music :*” but probably an essay on that elegant art was not deemed congenial with the institution of that learned body, for it is not preserved in their Transactions. I mention these, and shall mention other learned productions as they occur to me; but must premise, that I am no ways competent to the

enumerating all the various and indefatigable labours of this prolific genius.

Brook Taylor had, by this time, so far distinguished himself in the republic of letters, and particularly in those branches of science which then engaged the attention of the Royal Society, and had embroiled them in alliances and in wars of literature with foreign academies; that requiring a secretary conversant in all that concerned the Newtonian discoveries, and the abstrusest means of their elucidation, and of their support, they elected Brook Taylor to that office, January 13, 1714. In the same year he took his degree at Cambridge of doctor of laws.

It was at this time he transmitted, by a letter to Sir Hans Sloane, “*An Account of some curious Experiments relative to Magnetism,*” which were not delivered to the Royal Society till many years afterwards, and are to be found, page 151 of the 31st vol. of Transactions. In the year 1714, Brook Taylor ad-

ded not from himself to that learned compilation. His attendance on the Royal Society, and the controversies with foreigners which it engaged him in, occasioned, however, no remission of his private studies. He was preparing himself to do credit to the discrimination of those, who had selected him more especially on account of his learning and powers of mind displayed in the higher mathematics. Early in the year 1715, he published in Latin his *Methodus Incrementorum*, dedicated to the Royal Society. In May, 1715, he further presented a very curious essay, published in the 28th vol. of Transactions, entitled, “*An Account of an Experiment for the Discovery of the Laws of Magnetic Attraction.*” In the same year he published a most learned and able treatise “*On the Principles of Linear Perspective.*” His assiduous application and versatile genius, did not rest satisfied with these productions, but within the short space of one year, further engaged him in a controversial correspondence with the Count Raymond de

Montmort, on subject of the *Tenets of Mal-branche*, and which occasioned him to be particularly noticed in the eulogium of the French academy, pronounced on the decease of that able logician, and most fanciful philosopher.

The correspondence which Brook Taylor had some time engaged in with learned foreigners, and more especially the French, on the various topics of the new philosophy, had given him a general reputation abroad. The mathematicians of Paris for the most part espoused the cause of *Newton*, and sought a nearer acquaintance with the accomplished secretary of the Royal Society of London, whose letters, official or private, had so often reinforced them with new resources in their literary warfare with the German school; had pointed out gradations to science more direct, regular, and connected—and had shewn inferences of science more clear or more conclusive. In the year 1716, Brook Taylor accepted the pressing invitations of the Count

Raymond de Montmort, the Abbé Conti, and others, to visit them in Paris. On his arrival there, he extended his acquaintance with the leading members of the French academy, and it is to his memory, being yet cherished, and with high regard, in that circle of learned men, that my friends owe the perusal of this essay. I most highly respect the talents and character of my grandfather, but should little have thought of writing his life, but for the application made to me through my friend Mr. Seward.

In the capital of France, ever lively as learned, it was soon found that Brook Taylor possessed other accomplishments than those of the mathematician, and that these were but mere details of character comprehended in that of the general scholar, and finished gentleman. The company of such a person, in such a metropolis, could not be confined to the circle of men merely learned. It was eagerly courted by all who had temper to enjoy, or talents to improve, the charms of social

intercourse. Among these, as in contradistinction to mathematicians, were Lord Bolingbroke, the Count de Caylus, and Bishop Bos-suet. From the letters of these eminent persons we may compile a descriptive portrait of Brook Taylor. He inspired partiality on his first address, he gained imperceptibly on acquaintance, and the favourable impressions which he made from genius and accomplishments, he fixed in further intimacy by the fundamental qualities of benevolence and integrity. I subjoin some few notes addressed to him by Lord Bolingbroke, merely with a view of marking the estimation in which Brook Taylor was held by that extraordinary man: These notes are written, with all the warmth of genuine friendship and attachment; whilst, in my humble opinion, the letters of that statesman to Pope or Swift infer a controversy of wit and information for mutual reputation with each other, and with the world, rather than a correspondence originating in, and sustained by, confidential

and affectionate regard. The real friends of Lord Oxford could scarcely have a true love for Bolingbroke, nor Bolingbroke love those who were so partial to Lord Oxford.

Brook Taylor being of a countenance remarkably handsome, and of a person most elegant, in addition to the talents for society which I have mentioned, could not be otherwise than a favourite with the ladies. I know my fair friends will excuse this remark, for I know that however acutely and justly they may estimate the value of a man, on the merits of happy composition of mind and passions; yet they will acknowledge, a fine face, and fine figure, and fine manners, to be no despicable introducers of such merit to their notice and good favour. Among the ladies who honoured Brook Taylor with a particular, but virtuous regard, may be mentioned the names of Marcilly de Villette, and of Miss Brunton, the beautiful and accomplished niece of Sir Isaac Newton, whose character is elegantly touched in a letter of the occasionally

lively or learned, gay or grave mathematician
the Count de Montmort.

In February, 1717, Brook Taylor returned to London. In that year he composed three treatises, read to the Royal Society, and published in the 30th vol. of their Transactions. The first, read in the month of March, was entitled, “*An Attempt towards an Improvement of the Method of approximating in the Extractions of Roots in Equations in Numbers.*” His second paper, read in the same month, was—“*A Solution of Demoivre’s 15th Problem, with the Assistance of Combinations, and Infinite Series.*” The third, read in October, was—“*A Solution of the Problem of G. G. Leibnitz, proposed to the English.*”

Intense application to study had now, in some degree, impaired his health; and having in vain resorted to ordinary course of medicine, and to temporary relaxation, he was enjoined by his physician, to repair to Aix la Chapelle. This, and other reasons, perhaps

arising from his mind turning to subjects of moral and religious speculation, induced him to quit an office too laborious for the valetudinarian, and too confined in its scope of science for the true philosopher. It was the widest range of knowledge for which his comprehensive mind required leisure to engage in. He sought time for speculation in metaphysics, for the study of sacred literature, and for disquisition generally, of subjects moral as well as natural. His situation in the Royal Society confined him too much within the peculiar province of its institution, and fettered and engaged his studies too exclusively in consideration of the material world. Accordingly, by letter to the president, Dr. Halley, dated October 21, 1718, Brook Taylor resigned his office of secretary to the Royal Society.

Brook Taylor, returning from Aix la Chappelle to England, early in the year 1719, applied his mind to new subjects of learned inquiry. Among his papers of this date I find detached parts of a "*Treatise on the Jewish*

Sacrifices," and a dissertation of considerable length "*On the Lawfulness of eating Blood.*" Attending to new matter of investigation, he neglected not his former subjects of study, but with a perseverance, the result of natural taste conjoined with practical habits, resumed the task of applying his powers in science to his love of art, and the grafting mathematics on design, in a new and improved "*Treatise on Linear Perspective.*" His taste and accomplishment in drawing, which suggested the subject of this learned essay, continued to the latest hour of his life; and probably that life was shortened by the circumstance of this relaxation from severer studies, being of so sedentary cast. His talents in application to this art were versatile, as was his mind in resort to objects of science. He drew figures with extraordinary precision and beauty of pencil. Landscape was yet his favourite branch of design. His original landscapes are mostly painted in water colours, but with all the richness and strength of oils. They have a

force of colour, a freedom of touch, a varied disposition of planes of distance, and a learned use of aerial, as well linear perspective, which all professional men who have seen these paintings, have admired. Some pieces are composition, some are drawn from nature, and the general characteristic of their effect may be exemplified, in supposing the bold foregrounds of Salvator Rosa, to be backed by the succession of distances, and mellowed by the sober harmony which distinguish the productions of Gaspar Poussin. The small figures interspersed in the landscapes, would not have disgraced the pencil of the correct and classic Nicholas. It was in consequence of this work on linear perspective, that a dispute arose between Brook Taylor and Joseph Bernouilli, which terminated in the most inveterate quarrel between those learned men. In a treatise published in the “*Acts of Leipsic*,” Bernouilli had taken occasion to speak of this work of Brook Taylor, as abstruse to all, and as unintelligible to artists for whom it was more especially written.

Indeed this allegation seems not to have been altogether without foundation: for some years afterwards a very intelligent professor of the art of design, Mr. Kirby, drawing-master to Frederic Prince of Wales, published a treatise in 4to, entitled "*Brook Taylor's Perspective made easy;*" and that book hath been the *vade-mecum* of artists, whilst the original work hath been confined chiefly to the closet of mathematicians; and with them in such repute, as to have passed three editions. Brook Taylor would probably have admitted the justice of remark from Mr. Kirby; he would truly and candidly have answered, "That the book was written for "the learned, and that perspective, applicable "to design, was a subject matter selected in- "deed from natural propensities and taste, "but intended and used by him, more espe- "cially for occasion of advancing new pro- "blems, new solutions, and fundamental im- "provement in mathematics." He might consider a like objection coming from Bernouilli, as an invidious attack, and declaration

of learned war. On the above occasion Brook Taylor published “*An Apology against J. Bernouilli’s Objections*,” to be found in the 30th vol. of the Philosophical Transactions. I subjoin a paper in the appendix to this essay, which may afford the reader a further idea of the nature of this learned dispute, and of the animosity with which it was conducted.

Towards the end of the year 1720, Brook Taylor accepted the invitation of Lord Bolingbroke to pass some time at La Source, a country seat near Orleans, which that Lord held in right of his wife, the widow of the Marquis de Villette, nephew of Madame de Maintenon. I visited this place often with youthful enthusiasm, when resident at Orleans for some months in the year 1771, and regarded with veneration those beautiful scenes of converse between two men—one, of the most solidity and learning—the other of the first genius and eloquence, and both of the finest manners and most penetrating and powerful minds, that any age or nation hath pro-

duced. The place derives its name from the source of the Loirette, which forms a natural fountain springing from the centre of a small lake situate in the gardens. It is of a depth, or rather of a force, which hath resisted all attempts to fathom it ; and from its very spring, to where it falls into the Loire, about six miles distant, pours a stream as clear as copious. Lord Bolingbroke turned this great and beautiful feature of nature to due account, adapted the grounds and plantations to the river's course, and gave the whole an effect of improved nature, which is now well understood by the terms of *English Gardening*. During his residence at this beautiful spot, Brook Taylor fixed and cemented a friendship with its noble owners, which terminated but with life. In 1721, he returned to England, and in May of that year, published the last paper, appearing with his name in the *Philosophical Transactions* ; it is entitled, “ *An Experiment made to ascertain the Proportion of Expansion of Liquor in the Thermometer, with regard to the*

Degree of Heat. In the year 1721, Brook Taylor married Miss Brydges, of Wallington, in the county of Surrey, a young lady of good family, but of small fortune; which latter circumstance occasioned a rupture with his father, whose consent had never been obtained. This lady being, some months after marriage, with child, and given to understand that if the result of her pregnancy was the birth of a son, it would probably accomplish a reconciliation with the grandfather, looked with such earnest hopes to the event, that, on its turning out favourable, she literally died of joy;—her then weak frame not being equal to supporting the spirit of exultation, which animated, which exhausted, which killed her. The infant too died. This fatal event occurred early in the year 1723. It operated, as it could not but do, on a mind yet open to a sentiment of humanity, and roused all the feelings of paternal tenderness. When the mind of man is softened, it is ready for any other, as well as for the immediate impression of the

hour. Commiseration, forgiveness, and a full return of affectionate regard followed in quick succession; and John Taylor welcomed his son Brook to his house of Bifrons. This reconciliation took place in the autumn, 1723. The letter of Lord Bolingbroke congratulatory on the event, is dated December 26 of that year. During the two succeeding years, Brook Taylor continued at Bifrons; and the musical parties there, so agreeable to his taste and early proficiency, and the affectionate attentions of a numerous family welcoming an amiable brother, so long estranged by paternal resentments, not only soothed his sorrows; but ultimately engaged him to a scene of country retirement, and domesticated and fixed his habits of life. He could no more recur to the desultory resources, and cold solace of society, which casual visits, light acquaintance, and distant friendships, afford the man,—who hath *none to make, and cheer a constant home!* Meeting an agreeable young lady, he again proposed a permanent connection; and in the year

1725, with full approbation of his father and family, married his second wife Sabetta, daughter of John Sawbridge, Esq. of Olantigh, in Kent. In the month of July, 1729, John Taylor died, and his son Brook succeeded to the family estate of Bifrons. In March, the following year, Brook Taylor lost his wife Sabetta, who died in child-bed. The infant daughter lived, and, at the age of seventeen, was married to my late father. The event of my grandmother's death, and the birth of my mother, is marked by a letter from Lord Bolingbroke, mingling the subjects of condolence and felicitation, in a way peculiar to his genius and style of writing.

It is remarkable that, from the year 1721, to the year 1730, not one production from the pen of Brook Taylor appears in the Philosophical Transactions; nor, during that period of nearly ten years, did he publish any work; nor do I find any traces of learned composition, with exception to a "*Treatise of Logarithms*," placed in the hands of his friend Lord

Paisley (afterwards Abercorn) to prepare for the press, but which, I believe, was never printed. An impaired state of health may account, in some degree, for relaxation from severe studies ; but so long a term of years passed in alienation from old and strong habits of philosophic inquiry and literary emulation, and that too in the ordinary prime of manhood, imply a mind or in itself impaired, or busied and estranged by affairs and by affections from its ancient course. It is on these latter grounds that we are to account for Brook Taylor's withdrawing himself from the world and wars of literature. On his return to Bifrons, his leisure and pursuits were devoted to amusements, or to business, as the taste or temper, or engagements of his father required of him—most studious to please, as newly reconciled. On his second marriage, he found One whose person, manners, and good sense, further engaged and fixed his attentions to the family circle, which she improved and adorned. In the progress of life

and years, the love of society grows upon us. As the distrusts of general intercourse, founded in long experience of mankind, require nice selection of friends and intimates; so do they produce stronger attachment to those exclusively selected on foundations of love and esteem, so examined and brought to the proof. Perhaps too, on maturer and unprejudiced observation, and independent of our friendships, we become more partial to society, because in the end we more fully discover that concentration of mind and of learning which conversation affords, in pre-eminence over books, and over solitary speculation. Perhaps too (as love ever awakens at the hour of parting) whilst we approach nearer to the time when we are to quit the scene of life—we feel, as human beings, a stronger sense of the charms of mutual intercourse with those, not only sensible and worthy, but affectionate to ourselves. Society thus becomes our chief and leading interest and delight. Reading is in future a secondary concern of information and

of amusement: and learned speculations and writings seem tedious and disgusting, if too prolix for early communication, and too abstruse for easy intelligence, with those for whom we live, and whom we love. Thus all study becomes desultory, and subordinate in the practice of him, who having lived long enough to estimate the pursuits and concerns of life, finds in the result of his philosophy, that its true and greatest value consists in the interchange of sensible minds, and of worthy affections. From the time of losing his second wife, Brook Taylor lived but a short period, and his days seem to have been days of sorrow. The Essay, entitled "*Contemplatio Philosophica*," now printed, appears to have been written about this time, and probably with a view to abstract his mind from painful recollections and regret. It was the effort of a strong mind, and is a most remarkable example of the close logic of the mathematician applied to metaphysics. But the blow was too deep at heart, for study to afford more

than temporary relief. The very resource was hurtful, and intense study but accelerated the decline of his health. His friends offered every comfort ; in particular Lord Bolingbroke pressed his consolation, and sought to call his mind from regret of domestic endearments to social friendship at Dawley, with a solicitude which places the affectionate heart and goodness of that statesman in the most unequivocal point of view. These qualities have been often controverted in the character of Bolingbroke: but controversy respecting character rarely originates in, or is conducted with, the love of truth. It is often founded on a vain gratification of ingenuity and research to discover what others have never discovered; and which probably, therefore, did never exist. It often works on the sandy premises which the envy of cotemporaries suggests; which the credulity of after times loosely and wildly spreads abroad; which the malignancy of parties is ever ready to adopt and make application of; and which, finally, the

pride of talents and discrimination presumes to authenticate, on such idle or corrupt foundations. Man was not made to decide peremptorily on the pretensions of man. The judge is an object of judgment !

Having survived his second wife little more than a year, Brook Taylor died of a decline, in the 46th year of his age, on December the 29th, 1731, and was buried in the church-yard of St. Anne's, Soho.

I am spared the necessity of closing this biographical sketch with a prolix detail of character:—in best acceptation of duties relative to each situation of life in which he was engaged, his own writings, and the writings of those who best knew him, prove him to have been—*the finished Christian, Gentleman, and Scholar.*

CONTEMPLATIO PHILOSOPHICA.

AN ESSAY, *

BY THE LATE

BROOK TAYLOR, L. L. D. &c. &c.

SUBSTANCE is a thing subsisting of itself, by the reality of its own nature, without any ex-

* This essay, valuable as it is, and of intrinsic merit, yet bears many allusions to a further progress in the investigation of truth, which are in proof that it was considered by its author as a mere chapter, or prefatory to some more extensive undertaking. The Editor possesses many detached writings of Brook Taylor, which declare his design in beginning this work, and his intentions of future proceeding. As to the first, he originally entitled the treatise:—“ Some reflections relating to the first “ principles of general philosophy;” and he began it in these words: “ In the search of truth nothing seems to “ be so much wanting as to settle rightly, what is the “ nature, and what the extent of the knowledge we are “ capable of attaining to, by the help of our own *unin-* “ *spired natural faculties,*” &c. &c.

trinsical cause required to keep it in existence; which existence is not conceived as an effect, but as a matter of fact,—a mere actuality, which will always continue, unless some positive active cause does interpose and alter it. That a Substance now existing continues to exist, is not the effect of any actual cause, supporting its existence, by a positive act, as it were, continuing its existence, which would otherwise cease and fall into nothing, mere non-entity, if it was not thus upheld; but the pure negation of any cause destroying and annihilating it.

For the same reason that a Substance, according to this definition, is conceived as existing to all eternity by its own nature, or at least till some cause by a positive act destroys it; it may also be conceived to have existed from all eternity, and so not to have been created *ex nihilo*. From whence it appears, that creation *ex nihilo* cannot be proved by the light of natural reason without revelation. For since the thing may continue to exist of

itself till to-morrow, it may have continued to exist ever since yesterday; and by the same reason, from all eternity, so as not to have been produced at all. Therefore, before you can prove a Substance to have been produced *ex nihilo*, you must first prove the fact, of its having once not existed, which cannot be done by the mere light of nature, as is already shewed.

Cor. 1. According to the light of nature, it is most probable that all Substances, viz. the spirits of angels, men, &c. and bodies, were not produced *ex nihilo*, but have always existed;—not by a necessity of nature, for there is no such necessity belonging to them, but by mere matter of fact.

Cor. 2. According to the same light of nature it is most probable, that the modes and affections of Substances are the only objects of active powers, and not the existence of the Substances themselves.

Time is a substance, whose essence consists in a certain attribute which we have no proper

name for, but which we commonly call the Extension of Time, upon account of which Time is a quantity, having *partes extra partes*; such as are ages, years, months, weeks, days, hours, &c. which are known from one another by their proportionate lengths. This is the only attribute of Time; upon account of which it is perfectly uniform and similar itself, necessarily existent, unchangeable, and inactive. All other beings exist in Time; what exists in no Time, does not exist at all. Things exist in Time; but by so existing they do not affect, or in any wise alter the nature of that part of Time they exist in. When, early, soon, late, old, young, duration, &c. are terms expressing the modes and affections of things as they are referred to, and considered with respect to Time. When, then, now, &c. are terms referring to the particular parts of Time, which things have their existence in. Early, soon, late, first, last, &c. are terms relating to the order of things in Time. Old, young, &c. are terms which refer to the quantity of Time which is taken up by the

continuation or duration of things in Time. Continuation signifies sometimes the filling of some part of Time without intermission; and in that sense, it is not said of Time, but of the duration of things in it. In another (which is the original) sense, continuation is opposed to intermission, and signifies the immediate connection of the parts of any thing: in which sense Time is a *continuum*; it continues because its extension has no intermission. Duration is not properly an affection of Time (or another name of Time as it is often used), but that affection of things, by which they are considered as filling Time. That thing endures which fills or continues a part of Time, but that part of Time itself is not said to endure. The whole absolute nature of Time is infinite, within which are contained all the finite parts of it, by which we measure the duration of things.

Space is a substance whose essence consists in extension, properly so called, that extension being taken all possible ways: for ex-

tension, strictly speaking, in its original signification is the attribute of a line: but it is commonly used to signify the modes of quantity that are found in surfaces and geometrical solids, as well as in lines. Therefore a line is extended but in one sense, having only length. A surface has a greater degree of extension; length being found in it, in an infinite manner of ways, but under a certain limitation; there being length and breadth, but no thickness. Geometrical solid, or Space, is extended all manner of ways; in that there being found both length, breadth, and thickness. Space is an extended substance, and nothing else. Extension is its only essential attribute, as what we call extension of time, for want of another name, is the only attribute of that. Space is necessarily existent, and consequently eternal; it is unactive, unpassive, and infinite in its own extension, as time is. All finite Spaces are comprehended within the infinite Space, as the parts of time are contained in the infinite

time; that is, in the same manner as every *pars integrans* is contained, and comprehended within the compass of its *totum integrale*, as inches are contained in a foot. Space is not the place of all things, minds as well as bodies, as some philosophers have falsely imagined, attending too much to their fancy and imagination, and not weighing things by their pure intellect, which judges of the images and sensations of the fancy, and abstracts from them. Space is the place of nothing but body, of which only it can be said, “ that it is here, there, no where, great, small, &c. Those terms having all of them a reference to extension, which is the attribute of Space, and upon account of which body fills Space—other beings that are not corporeal, cannot be said to be in place; cannot be said to be great or small, when those terms refer to the quantity of extension, for those things have no more relation to extension, than sounds have to colours. Body is in Space, and fills it; but the place is not affected or altered in its

nature by the body which is in it; nor the body by the place.

Body is a substance whose only attribute is solidity, which necessarily must exist in space, and fill space by so existing. Solidity is that by which a Body fills space, so as to exclude all other Bodies from that same place whilst it is there. Solidity, thus explained, is evidently distinguished from hardness; which is solidity, with cohesion of parts added to it: but pure solidity may be either with or without cohesion of parts. Water is as solid as a stone: but water is not hard, though a stone is. By its solidity every body fills a portion of space adequate in quantity to itself. Upon account of its thus filling space, Body is said to be extended. But the extension is not properly the attribute of the Body, but of the space, the place it fills. Body is therefore said to be extended, because its parts are distant from one another, and those parts are therefore said to be distant, because they are in different places, which difference of place,

is, what is properly called distance. So that extension and distance belong to body only upon account of space, but to space originally and by its own nature. The idea of solidity is not necessary, but contingent; for it is no contradiction, but an evident possibility to attend to the idea of solidity, and at the same time to suppose no solid being to be actually existent. It is equally possible to conceive Body existent, or non-existent. Therefore the essence of Body is indifferent to existence, or to non-existence. Therefore Body is not necessarily existent. Therefore Body is not necessarily infinite. Therefore the finite parts of Body are distinct substances entirely independent on one another. Therefore the parts of Body do not necessarily cohere by their own nature. Therefore cohesion is a phænomenon which requires an extrinsical cause to account for it: it is a constant effect, which would cease, and the Body be no longer hard, if that cause should cease to act. Therefore Body is moveable. Therefore motion is com-

municated among Bodies according to the laws of nature (as explained by Sir Christopher Wren, Dr. Wallis, Sir Isaac Newton). The *vis inertiae*, mentioned by them, being nothing positive, distinct from, and superadded to the nature of Body, for it is only the necessary consequence of that property of Body, by which two particular Bodies cannot be in the same place at the same time. It being necessary for a Body to exist in place, that Body which exists no where, exists not at all. But this maxim is applicable to no being but Body. Body is entirely of an unactive nature; therefore when a Body, formerly at rest, does afterwards move, or, on the contrary, there must be some extrinsical cause assigned of this phænomenon, because the thing was not capable of doing this itself.

Mind or *Spirit* is a substance which we have but a very imperfect knowledge of, because we have no conception, no idea, of its essence. The name of Mind or Spirit we give to our own souls, and suppose angels, and even God

himself, to be of the same nature. By reflecting on what passes within ourselves, we find Mind to be capable of these three things; perception, sensation, and action. By perception we see and conceive things; by sensation we feel and taste of pleasure and pain; and by action we perform all we do. The Mind has commonly been conceived by philosophers, as having but two faculties; the understanding, by which we perceive things, and the will, by which we act. But in this distribution of the powers of the mind into faculties, there was not care enough taken to distinguish every thing that passes in us; for sensation and perception, though the mind is passive in them both, are certainly as different from one another as can be. It is surely a thing of a quite different kind to perceive two and two to be four; and to be glad or sorry. These things we perceive and know to pass in our minds, yet we know not what that attribute, that essence of our minds is, which makes them capable of them; and therefore we know

not how they are performed. We look upon these three things, as the exercising of three powers of the mind, which itself we conceive to be indifferent to the exercise or forbearance of either or all of them; just as Body is indifferent to motion or rest. We conceive that the soul may exist without either action, perception, or sensation, though we have no idea of it in that state, as we have of Body at rest; because we have no knowledge of the essence of the soul, but only of these its secondary qualities, by the means of which we know the fact of its existence, though they do not inform us of its essence. These faculties are conceived as quite distinct things from one another; and therefore it is hard to know how they are connected in, and how they proceed from, the same nature. It is absurd to ask a physical cause of the action of a Mind, as we do of the beginning of motion in body, because body cannot move itself: but the actions of Mind are from itself, and therefore must have no cause asked of them; for that would be to

deny Mind to be an active being; it would be to deny that there is any such thing as action *in rerum natura*. The Mind finds itself uneasy in its present condition, sees what action of its own will remove that uneasiness, and therefore it is reasonable to expect that it should exert that action. But yet when it exerts that action, it does it not necessarily; it is not a physical consequence of that uneasiness it now feels, or of that perception of its own power; but that action is the pure and simple effect of the Mind's own self-determination, which has no physical necessary cause antecedent to it; but might have been exerted or not, notwithstanding any influence of the knowledge the Mind has, or of its present sensation. It is hard to conceive how any thing can direct its own action, and not perceive both the object of that act, and its own power of exerting it; therefore it is most probable, that understanding and will are necessarily connected in the same essence. But where these two are joined, it seems that there

is a full power of action, and therefore that sensation is not necessary to an active being: though it is hard to find a reason why a being that has not sensation, should rather act than not, in any particular instance; yet the thing is possible, and it is no more necessary that that being should not act, than that it should. Mr. Leibnitz thinks there would be no action; but he brings no proof of it, but an hypothesis of his own; and therefore may be properly said to beg the question. It must be granted, that it is not probable that there would be uniformity and design in the actions of a being that has no sensation; and therefore where the actions of any being discover a uniformity, and a visible tendency to a certain end, it is probable that that being has sensation, and that that faculty is gratified by the accomplishment of that end. This is the case of all agents we are well acquainted with, they all acting for the most part agreeably to the view they have of the present most apparent good; that is, according to that which appears to

them most likely to give them pleasure, either positive, by real enjoyment, or negative, by the avoiding of evil. I say, that men, for the most part, act according to this view of what would be best for them, but not always: for every one is too notoriously sensible that he does sometimes choose a smaller present and transient good, in preference to a more substantial and lasting one, which he might have chosen. This is not to be accounted for, but by the mere spontaneity of action; and even when we have considered that, it leaves the Mind full of wonder and amazement, that any agent should be such a fool, and so indiscreet. We wonder at folly, though we see it, and practise it ourselves every day; because it is unreasonable to quit a greater good for a less, or to submit to evil, when it may be avoided. Yet we see that it can be done, and too often is done; and the power of so doing is the foundation of all morality.

According to this account of proper self-activity, the actions of a Mind seem to be the

most entirely free, and void of necessity, that is possible, and indeed they are truly so; for the Mind does never exert any action, but it had it in its power to have forbore it, even with the same entire view and sensation of all those circumstances upon account of which it determined itself to act. This entire freedom of action seems to most persons to make the actions of Minds the most perfectly contingent and void of certainty: yet if we consider this matter carefully, we shall find, that though upon account of the spontaneity and freedom we have described, the actions of Minds are most truly contingent, as contingency is opposed to necessity (I mean physical necessity, which is found in all those things that flow immediately from the nature of the subject, as the uniform motion of body), and yet they may nevertheless be so far from uncertainty, as to be certain in the highest degree. It is hard to reconcile certainty with absolute freedom of self-action, which is the only foundation of all morality; because it is hard to se-

parate certainty from physical necessity. But those two things are not necessarily and essentially joined. For though my action, in certain circumstances, be absolutely spontaneous and from myself; yet it may be certain that I shall act thus, rather than otherwise. It seems not to be difficult to know how a man of known wisdom will act on a certain occasion; yet that action is entirely free and spontaneous. Where the character of the agent's wisdom is imperfect, it seems to be but probable how he will act in certain circumstances; it being but probable that he will follow right reason. But where the wisdom of the agent is consummate and altogether perfect, it is certain that he will follow right reason, and therefore certain how he will act upon any occasion: but all this while his actions are entirely free and spontaneous, and therefore truly contingent, and not at all necessary physically; because he has it in his power to do otherwise than he does, though it is certain he will not. What in the nature of any

agent can be the cause of this absolute certainty, which does not proceed from physical necessity, but is perfectly consistent with perfect freedom, and the truest spontaneity, and therefore does not at all interfere with morality, is impossible for us to know; because we have no knowledge of the essence of Mind, wherein that certainty is founded. For the same reason we cannot assert, but that the actions of beings less perfect in the character of wisdom, may be absolutely certain in the same sense, though entirely spontaneous, and therefore subject to morality. I say, we know not enough of the nature of Mind, to assert this to be impossible; on the contrary, the prescience, or fore-knowledge of God, which we have the fullest testimony of, that can be, does seem in fact to prove it. But of this* more largely by and by.

* I have thought this essay, incomplete as it is, and a mere chapter apparently of some systematic work intended by the author, if health and time had permitted, to be yet *of itself*, a valuable fragment, worthy preserv-

Though we have such imperfect knowledge of our own Minds, yet by what passes in ourselves, we evidently see our own existence; and we see by the same evidence that our Minds are individuals in the most strict and proper sense. Mind is so essentially one, that it is in no sense divisible into distinct integrant parts, neither as space, nor as time. From hence it is evident that Mind is not extended, and consequently does not exist in space, but in a manner wholly inconceivable by us. No terms therefore are applicable to Mind in a proper sense, which imply a relation to space, such as, here, there, present, absent, great, small, whole, part, &c. Mind does not fill space, neither is it a physical or a

ing, for the perusal of my philosophic friends. The few copies printed, and given to them only, cannot be termed a publication.

In *this place* Brook Taylor seems to have had in view an investigation at large of the evidence and operations of the Divine Providence ;—and in many other passages of this essay, in allusion to various subjects, he promises further discussion.

mathematical point, or in any manner in place. When Mind is said to be in place, or to be present to place, or to body which is in place, or when things are said to be in any Mind (as when St. Paul, speaking of God, said—" for in him we live, and move, and have our being.") These expressions can be understood no otherwise than in a translated metaphorical sense; meaning only a presence in power, by which Mind is capable of perceiving space, and body in it, and of producing or stopping the motion of body. What attribute is necessary to Mind to make it capable of these things, we do not know: but when by that attribute Mind is so disposed as to perceive, and to be able to act on body, it is said to be present to body; though that presence cannot be understood in a local sense, as if Mind was present to body, either by contact, as bodies are to one another; or by comprehending it, as space is present to body; or by filling it, as bodies do space. We know not how Mind perceives, how it feels, or how it

acts. And if we reflect on ourselves, though we know ourselves to act, yet in any particular action we know not how we do it, nor how much we do, nor how much of the action proceeds from some extrinsical unknown cause concurring with us to production of the effect. We know not how our soul acts on our body, or how it is affected by the body. We know not how much of the body is immediately concerned in the communication with the soul; though anatomy discovers it probably to be but a small part in the brain. We know not whence it comes, that we cannot have the same communication with all bodies, as we have with that small part of the brain; that we perceive not things directly, but have the ideas of them raised up in our minds by the motions of that part of the brain, and conclude their actual existence from that idea, by a sort of instinct, or habitual judgment that we make; that we perceive not that part of the brain itself, by the means of which we perceive, and communicate action to other things.

These, and many other things that pass in us, we know not how they are done; but we know that they are not done by our own bare self-action; for many of these things happen to us contrary to our desire, and in spite of all the opposition we can make to them. And we know too, that they are not done by the mere nature of the things, I mean of our Mind and body; because then the communication ought to be indifferent to all body, and we might transfer it from one body to another, as we pleased. Therefore it is evident, that these things are done by some extrinsical cause; some agent who has power over Mind and body, and affects them thus for ends best known to himself.

That Being which thus disposes of, and influences us, either immediately by himself, or mediately by his instrumental agents, unknown to us (if there be any such) is properly to be called our *God*. And if we consider the affections of our own and other bodies, their symptoms of fluidity and firmness, gra-

vitation, the propagation of sounds, and the propagation of life through the whole visible world, we shall find it probable, in the highest degree, that it is, *One and the same God*, who has thus formed, and thus disposes of, and governs all things we are acquainted with. This, together with the necessary consequences that may be drawn from it, is all the knowledge we can have of God by the light of nature. What we know more, is owing to his own good pleasure in revealing it to us, by the prophets, by our Saviour, and by the apostles. But to confine our thoughts at present to the mere light of nature unassisted by revelation; we can know no more of God, than that in fact he made and governs the world. We know nothing of the manner how he made, and how he governs the world. We only know the fact; for we know nothing of his essence—which is the less to be wondered at, because we do not even know the natures of our own souls.

Some philosophers, by a false kind of rea-

soning, founded in the abuse of several terms, particularly those of perfection and goodness, pretend to establish a great many abstruse maxims about the omnipotence, omniscience, and infinite goodness of God, and about the simplicity of his nature, his self-existence, &c. But all that we can know of these things by our own unassisted reason, is certainly no more than this;—that God's power extends to all those things we actually see performed by him, and by a reasonable induction from them, to all things which in their nature, are possible objects of power; this, we may very justly call *Omnipotence*.—That his knowledge extends to every thing, that we find him any way actually to know, as he certainly does every thing he has done, and thence, by a most reasonable induction, we conclude that he knows every thing that can be the object of knowledge; and this is properly called *Omniscience*. That *his goodness* extends to all his sensible creatures, the reflection upon final causes plainly shewing that the whole œcono-

my of the world does tend as much to the production of their happiness, as their natures can allow of. Thus much we know of the attributes of God, by the mere strength of our own reason. And by reflecting more particularly upon what happens to ourselves, we may come to discover the obligations we are under to have a regard to his will in all our actions, as far as we can discover it, and so far we can demonstrate what is called *natural religion*; of which it will be worth while to say something more by and by.*

As to the creation and government of the universe, and the natures of things, the conjectures and opinions of philosophers are many and various. Some have been perfect atheists, supposing every thing to have been made, and to be continued by the mere powers of nature, without any governing or directing Providence. Some have held all substances, as to their matter, to have existed from all eternity, but assert a God to be necessary, to order and

* Vide note, page 58.

govern things as they now appear. Some assert, that all substances, besides God himself, were produced and had their existence from him, being created out of nothing; and they think this assertion to be proved by the light of nature, from the perfections of God, and from the imperfections and contingent nature of all other beings. As to the present continuance and government of the world, these philosophers are divided in their opinions. Some hold, that the existence of substances, once produced, continue, by the powers given them in the creation, by their own mere natures, without any positive continued act of the Creator; and that his providence appears in the present government of the world in the production of those phænomena, which cannot be necessary consequences of the natures of things. Other philosophers hold, that the very existence of substances is continued by a positive act of the Creator, by a continued creation, which act, if he should withdraw, they say, all created existence would cease,

every thing would vanish into nothing: as the sound of a pipe doth cease, when the artist leaves off to blow. And these again are divided in their opinion as to the production of the present phænomena of nature. Some of them hold, that there is a continual action of the Creator (or of his subordinate instrumental plastic agent), besides the action of conservation or continued creation, to keep things in their present state; which, they say, cannot be the effect of the mere natures of things. Others hold, that all things continue by the mere powers of nature, and that the providence of God appears only in the conservation of existence, and his infinite knowledge and wisdom, in the having ordered every thing in the beginning in so wonderful and beautiful a manner. This is the opinion of the *Cartesians* and *Malbranche*, particularly as to the material world; and of *Leibnitz*, who carries this notion to the most extravagant height, asserting it of all subordinate beings in general; of minds, as well as of bodies. And

he is so extravagant as to assert, that there can be no real physical communication between mind and matter (because *he* cannot perceive how it can be); and in consequence of that opinion he asserts, the phænomena of minds and bodies to concur and correspond with one another, by virtue of a pre-established harmony appointed by God at time of creation. But almost all these philosophers, by asserting things they cannot prove, give too much advantage to atheists, who have nothing to do to overthrow their systems of religion, but only to deny their assertions, and not to grant them their suppositions; or to deny those positive conclusions, which are drawn from no other premises but their own ignorance. When it is asserted, that substances were created out of nothing, it may be answered only by a *non constat*, as may sufficiently appear by what I have said already. To prove that substance was created out of nothing, it must be proved in fact that there was a time when it did not exist; but this can never be

done by the mere light of nature. Therefore all that is built only on this assertion of creation out of nothing, is merely precarious; and the atheist has as much right to deny it, as the theist to assert it: so that there is no proof of religion from this principle only. If in fact substances were created out of nothing, that must be proved from revelation; but that I do not meddle with now. Those have yet a harder task, who maintain that conservation is a continued creation; for by this assertion, they deny substances to be self-subsistent, contrary to the general conceptions of mankind, who conceive bodies and spirits to be substances, requiring no cause for the continuation of their existence. Therefore when they put the whole of religion on this principle, affirming that the providence of God appears in nothing, but in his conservation, or continued creation of substances, and that as to the rest, the phænomena of the world are carried on by the mere natures of things, they give the atheist too great an advantage; for when

he has denied their conservation (which they can never prove) he has entirely overthrown all their religion. For the same reasoning that makes the world able to subsist in all its phænomena without a Providence for one day, will make it able to subsist to, and to have subsisted from, all eternity. Therefore the Cartesians should have a care how they put the whole of natural religion upon such slight principles: for I defy them to convince any man, who has not been prejudiced by the philosophy of the schools, that matter (not to say any thing of our souls) does not exist by its own nature, but requires a positive act of some Superior Being to uphold it from falling into annihilation. Since this notion of conservation is so precarious, and creation out of nothing is as hard to prove by the mere light of nature; the only argument that is left to demonstrate natural religion, is the necessity of a God to produce the phænomena of the world. Therefore to make this necessity the more sensible, it is worth while to consi-

der how impossible it is to account for the phænomena of nature, by the mere nature of matter. It will be sufficient to shew it in *gravitation* and *cohesion*. As matter can do nothing but by local motion, therefore these phænomena must be produced by the rapid motion of a fluid. But to produce gravitation, that rapid motion must tend towards the centre, whither heavy bodies tend. But such a converging motion of a fluid is impossible, and if it did once begin, it would immediately cease by the mutual resistance of the parts of the fluid; and therefore gravitation cannot be solved this way. Neither can cohesion be solved by mere mechanism. For if it be occasioned by mechanism, it must be by a pressure, occasioned by the motion of an ambient fluid: but such a pressure cannot make any particles to cohere which are not hard already; therefore the pressure of a fluid cannot produce hardness; besides, that such a pressure may be proved to be impossible by the common known laws of motion. Therefore nei-

ther cohesion or gravitation can be accounted for by mere mechanics: and much less can the other more compounded phænomena of nature, as the formation and growth of mineral, vegetable, and animal substances, the motions and life of animals, &c. It is necessary, therefore, to have recourse to a Providence influencing every thing in a manner unknown to us. Those who assert this, and consider rightly the final causes which discover themselves in the nature of man, and in every part of the creation, do put natural religion upon the most sure, and unmoveable foundation, whatever be their opinion concerning the creation of substances from nothing. Dr. Cudworth, in his Intellectual System, calls those but imperfect theists who hold matter to have been eternal, as well as God; and he thinks their notion of God's omnipotence is too narrow. But, if I am not mistaken, their notion of omnipotence was the same as his, viz. " That it " is a power of doing every thing that is do- " able, everything but contradictions, that is,

" every thing that can be conceived capable of
" being done; conception being the only rule
" of possibilities." As to the reducing of
all impossibilities to what is commonly called
a contradiction, I do not know what difficulties
might attend this way of explaining
things: but in the other part of his definition,
viz. " That conception is the rule of possi-
" bility, viz. that every thing is possible,
" which can be conceived;" I believe all the
imperfect theists (as he calls them) agree en-
tirely with him. All the difference therefore
between them and him is, that he concludes
from omnipotence that matter can be produced
from nothing, or annihilated, and therefore
that God did create it from nothing: but they
conclude that God's omnipotence does not
reach so far, because they think they conceive
the thing itself to be an impossibility. And
certainly according to the common notions of
mankind, unassisted by revelation, they were
on the more probable side of the question.
But according to my present thoughts, it is

wrong to assert positively on either side. Truth in this subject is what our faculties cannot reach to; and therefore it is best to own our ignorance, and neither to affirm or deny. If after a full inquiry I shall find that revelation has asserted creation of substances out of nothing, I am prepared to believe it; because I cannot demonstrate the impossibility of it, no more than I can the possibility, much less the necessity of it. In all our disquisitions, if we have a mind to be certain of the truth we find, and not to be amused with mere opinions, and to run into error; we ought to be very careful to lay no greater stress upon any conclusions, than the nature of the premises they are drawn from require. If the premises are evident and clear conceptions, the conclusions that are rightly drawn from them will be certain knowledge: but if the premises are but probable, or altogether uncertain, the conclusions will be so too, and we ought to value them accordingly. As in all our inquiries it concerns us to use this

caution, so it is most highly necessary that we should do it in those things where religion is concerned. A false argument used in religion does a great prejudice to the whole subject. For an adversary who catches you in a mistake of this kind, will be very apt to think all your reasoning to be of the same stamp; and so will hardly be prevailed upon to listen any more to what you can say, and will thus be hardened in his infidelity. So that it is a great mistake in some persons, who are too much given to mistaken and passionate devotion, which is superstition, to think it a crime, and to cry out immediately as if the foundations of religion itself were going to be undermined, when they see any body (though purely out of a sincere love for truth) endeavour to shew the weakness, or so much as pretend to question the conclusiveness of any argument, that ever has been used in favour of religion. False arguments are like false friends, and treacherous or cowardly soldiers, who are more likely to betray and weaken a

cause, and to overthrow the security of its solid bulwarks, than to do it any service. Therefore it is a service to truth, and not an injury done it, to discover and to explode all false reasons that have been brought to the pretended support of it. Truth has no occasion for falsehood to support it; its only strength is in its own forces, in its own evidence, which is able to bear out against all attacks, and grows the stronger for being tried. That which will not bear the strictest trial, is not truth, but subtle error, which of all things, it concerns us to detect, and to avoid.

From what is said already of the ignorance we are in of the essence of mind, it is evident that we are not able to know whether any mind be necessarily existent, by a necessity *a priori* founded in its essence, as we have shewed time and space to be. Some philosophers think that such a necessity may be demonstrated of God, from the nature of perfection. For God being infinitely, that is, absolutely perfect, they say he must needs be necessarily

existent ; because, say they, necessary existence is one of the greatest of perfections. But I take this to be one of those false and imaginary arguments, that are founded in the abuse of certain terms ; and of all others this word, perfection, seems to have suffered most this way. I wish I could clearly understand what these philosophers mean by the word perfection, when they thus say, that necessity of existence is a perfection. Does perfection here signify the same thing as it does, when we say that God is infinitely good, omnipotent, omniscient? Surely perfections are properly asserted of the several powers that attend the essences of things, and not of any thing else but in a very unnatural and improper sense. Perfection is a term of relation ; and its sense implies a fitness or agreement to some certain end, and most properly to some power in the thing that is denominated perfect. The term (as the etymology of it shews) is taken from the operation of artists. When an artist proposes to himself to make any thing that shall

be serviceable to a certain effect, his work is called more or less perfect, according as it agrees more or less with the design of the artist. From arts, by a similitude of sense, this word has been introduced into morality, and signifies that quality of an agent by which it is able to act agreeable to the end its actions tend to. The metaphysicians, who reduce every thing to transcendental considerations, have also translated this term into their science, and use it to signify the agreement that any thing has with that idea, which it is required that thing should answer to. This perfection therefore belongs to those attributes that constitute the essence of a thing, and that being is properly called the most perfect which has all, the best, and each the completest in its kind of those attributes, which can be united in one essence. Perfection therefore belongs to the essence of things, and not properly to their existence; which is not a perfection of any thing, no attribute of it, but only the mere constitution of it in *rerum na-*

turđ. Necessary-existence therefore, which is a mode of existence, is not a perfection, it being no attribute of the thing, no more than existence is, which it is a mode of. But it may be said, that though necessary-existence is not a perfection in itself; yet it is so in its cause, upon account of that attribute of the entity from whence it flows: that, that attribute must of all others be the most perfect and most excellent, which necessary-existence flows from, it being such as cannot be conceived otherwise than as existing. But what excellency, what perfection is there in all this? Space is necessarily-existent on account of extension, which cannot be conceived otherwise than as existing. But what perfection is there in space upon this account, which can in no manner act on any thing, which is entirely void of all power, wherein I have shewed all perfections to consist? Therefore necessary-existence, abstractedly considered, is no perfection; and therefore the idea of infinite perfection does not include, and consequently

not prove God to be, necessarily-existence. If he be so, it is on account of those attributes of his essence, which we have no knowledge of.

APPENDIX,

CONTAINING

ORIGINAL LETTERS, &c. &c.

*Letter from the Count Raymond de Montmort,
dated September 2, 1715; addressed to Dr.
Brook Taylor, at Child's Coffee-house, London.*

J'APPRENDS, Monsieur, par une lettre de Mons. Nicolle qu'il en a reçu une de vous avec deux exemplaires de votre livre dont vous le chargéz de faire la distribution, votre lettre est du 18 Juillet, et il me marque que vous m'en avez écrit une, on il se trouve plusieurs objections contre la physique de Descartes, et du Pere Mallebranche. Je crains bien, Monsieur, qu'il n'étoit perdue, car je n'en ai reçu

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q'une de vous depuis votre depart de Paris, et il n'y a aucune matière de science; ce seroit une vraie perte pour moi. Si par hazard je la reçois j'aurai l'honneur de vous en donner avis aussitôt, et j'y ferai reponse avec toute l'application dont je serai capable. Vous sçavez sans doutte la mort du roy: il expira dimanche a 8 heures $\frac{1}{2}$ du matin. Je jeune roy alla Jeudi au Parlement. Mr. le Duc d'Orleans sera regent du royaume pendant le minorité. Ce prince à infiniment de merite et beaucoup d'esprit. On espere un avenir meilleur que le passé. Mons. le Noailles a salué le jeune roy, Mr. le Duc d'Orleans les princes et les princesses, et en a été tres bien reçu. Le roy va à Vincennes pour toujours. On va travailler au Louvre, et on assure que la cour demeurera à Paris. On se flatte que les Jesuits seront un peu humiliés. En ce cas le *public** sera bien aise. Le bon Pere Malle-

* N.B. The orthography, &c. throughout these letters is copied literatim.—And it has been thought proper to give the letters entire, in preference to extracts under any consideration of relevancy, or application to the text.

branche traîne toujours, et il n'y a pas d'apparence qu'il passe l'automne. Que n'êtes vous ici Mons. pour nous aider à manger toutes nos peches et toutes nos prunes : on en regorge ici. Nous attendons compagnie de Paris. Sans la mort du royaume elle seroit déjà ici. Tous nos amis se portent bien et m'ont chargé de vous faire des compliments. Madame de Montmort sur tout. Portez vous bien Monsieur et continuez de m'aimer puisque personne ne vous honore plus parfaitement que moy. J'ai déjà l'honneur de vous écrire. Apprenez moy si vous avez reçu ma lettre. Mon adresse est à Montmort par Epernay.

Remond de Monmort.

A Montmort ce 6 ^{bre}, 1715.

Letter of the same, dated March 31, 1716.

IL nous seroit fort difficile Monsieur de faire venir votre cidre par Galais. Mylord Stair ne fait rien venir par cette voye. Il faudroit une permission du prince, et cela n'en vaut pas la peine. Ainsi il faut y renoncer, et que vous le buviez avec vos amis, ou bien il nous faudra tentér la voye de Rouen. Vous pouvez en parler a Monsieur Arbuthnot qui m'a fait mil amitiez a Londres et mil offres de services. Il a un frere a Rouen riche negotient e galant homme a qui nous pourrions nous adresser, vous pour faire entrér votre cidre icy; moy pour faire sortir mon vin de France. Mr. le Evesque de Troyes m'a dit qu'il a reçu une lettre de vous que luy a fait beaucoup de plaisir.

J'ai dans mon livre page 394 un Catalogue des enfans masles et femelles nès a Londres depuis 1629 jusqu'en 1719, pourriez vous m'envoyer la suite jusqu'en 1715 inclusivement? pourriez

vous encore m'envoyer le nombre de vos morts. C'est a dire un registre des enterremens depuis le plus grand nombre d'années qu'il vous sera possible ? vous m'obligerez beaucoup. J'ai encore une autre grace a vous demander. C'est de m'envoyer une relation exacte et philosophique du beau phenomene que vous avez eu a Londres la nuit du 17 en 18, de notre style. J'en ferai le rapport a l'academie des sciences.

Mr. de Waldegrave qui est icy, etoit de prendre du caffé au lait avec moy : il me charge de vous faire mil et mil compliment de sa part. Remerciez bien pour moy Monsieur Halley de l'honneur qu'il me fait de se souvenir de moy dans la lettre qu'il a ecritte a Mr. de Fontenelle. Le plus grand nombre s'est oppose a faire imprimèr le morceau de Mr. Keil dans les Memoires de l'Academie par la raison que Mr. Keil est etranger a l'Academie et que cela est contre les statuts. Je pris le parole, representai 1^{mo} que le morceau est excellent, 2^o que Mons. Newton est

attaqué dans les memoires par Mr. N^{as} Bernoulli qui non plus que Mons. Keil n'est pas membre de l'Academie. 3° que s'il etoit jamais permis de faire exception a une regle generale, c'etoit en faveur d'un aussi grand homme que Mons. Newton, ou de Mons. Halley au nom de la Societé Royale.

Vous devez etre bien scandalisé Mons. de n'avoir point encore reçu ma reponse a vos objections contre nos principes et notre maniere de philosopher en physique. J'espere q'elle sera bientot en etat de vous etre envoyée. Je ne scaurai trop prendre de precautions, et peser avec trop de soin, ce qui est destiné pour des juges aussi eclairés que vous l'estes tous Messieurs. Nous sommes encore plus divisés sur la physique que nos theologiens ne le sont entre eux. Quoy que l'on voye un peu plus clair dans la philosophie que dans la religion notre reunion sera difficile, *nam toto cœlo distamus*. Il nous faut de bonnes preuves, je vous encherche, et comme rien ne plait a l'esprit que ce que est dans un ordre naturel

et methodique, je m'attache non seulement aux choses, mais aussi a la maniere de les dire.

Faittes toujours mes complimens je vous supplie aux personnes qui me font l'honneur de se souvenir de moy. Tous mes amis de ce pays vous font les leurs. M^{gr}. le Regent court grand risque de perdre un oeil qu'il s'est blessé en jouant a la Paume. J'ai lu il y a quelques jours la copie d'une lettre très curieuse que Mons. Leibnitz a écrit a l'Abbé de Conty homme de qualité et de merite qui est parmy nous et qui vous connoissez sans doutte. Si vous ne l'avez pas vu, demandez a la voir. Comme il y a fort long temps que je n'ai reçu de vos nouvelles, j'en suis en peine. J'ap-prehende que vous ne soyez malade. Personne au monde ne s'interesse plus que moy a tout ce qui vous regarde, ne vous aime, ne vous honore plus parffaitement que moy.

Remond de Montmort.

Mademoiselle Plancy qui vous presente

ses respects, commence a etre bien forte dans l'accompagnement. Dites je vous prie a Mons. Moivre que je ne veux plus l'aimer puisqu'il m'oublie.—A Paris ce 31, Mars,

1716.

From the same, dated January 2, 1715.

IL y a un temps infini que je n'ai reçu de vos nouvelles, Monsieur, je ne puis vous exprimèr a quel point je m'en ennuye. Vous avez du recevoir deux lettres de moy que j'eus l'honneur de vous ecrire au commencement du mois passé. Je ne suis point encore en etat de vous repondre a toutes les difficultés philosophiques que vous m'avez proposé, vous en trouverez la raison, et peut-être mon excuse dans le compte que je vais vous rendre de ma conduite et de mes occupations. Deux jolies personnes dont la plus agée a 21

ans, toutes deux vives, fringantes, folatres, spirituelles, belles surtout, sont icy depuis deux mois, et doivent rester avec Mad^{me} de Montmort tout le temps qu'elle a du demeurer icy. C'est a dire tout la mois de Janvier. Elles m'ont tellement occupe le cœur et l'esprit qu'il m'a ete impossible de penser a autres choses qu'a leurs charmes. Lorsque je veux prendre un livre elles me l'arrachent des mains. Je n'espere pouvoir penser et travailler que lorsque j'aurai le malheur de les perdre, Ce sera dans quelques jours. Je compte de rester encore un mois a Montmort. Je tacherai de mettre ce temps a profit pour vous dire un peu au long ce que je pense sur les matieres dont vous avez bien voulu remplir vos lettres. En attendant Monsieur j'ai voulu me donner le plaisir de m'entretenir par lettres avec vous, et de vous renouveller au commencement de cette année les veux sincères que je fais pour votre bonheur depuis que j'ay l'honneur de vous connoître. Je ne sçai point de nouvelles de sciences. Je m'en

instruirai quand je serai a Paris, et je vous en manderai. Vous avez apparemment le livre de Mr. Hermant qu'il m'a envoyé. Il m'a paru que c'est un ouvrage tres sçavant. Je n'ay fait que jeter les yeux dessus et le parcourir forte a la hâste. Mr. Nicolle a été ici 3 semaines, et avoit bien voulu y rester plus longtemps car il etoit fort touché pour Mad^elle Kinot que vous connoissez, mais la rentrée de son academie le rapelloit. Mr. l'Abbé Bossuet est tres bien auprès Mons. le Regent, et fait assiduement sa cour. Mad^{me} de Montmort vous fait mille complemens. Faittes bien les miens s'il vous plait a Mr. Newton, Halley, et aussy a Mess. Burnet et Gravesande si vous les connoissez. Bien des reproches s'il vous plait a mon bon ami Monsieur Moivre de ce qu'il m'oublie et ne m'ecrit point comme il me l'avoit promis. J'ose aussi vous prier de parler de moy a Mr. Sloane que j'honore tres parfaitement. Ne pourriez vous point nous mander un peu des nouvelles de l'état présent d'Angleterre et

d'Ecosse ? Parlez en *toris* ou en *wigh* comme vous voudrez. Il n'importe, mais des nouvelles. On croit icy que le Duc d'Ormond est encore en France n'ayant pu passer et on n'a point de nouvelles certaines que le Ch. de St. George soit en Ecosse. Mr. de Waldegrave sans le fatal accident qui luy est arrive, eut été dans la necessite de la suivre. C'est une consolation pour nous dans son malheur. J'ai envoyé a Mons. Bernoulli un des exemplaires de votre beau livre. Ecrivez moy donc mon cher Monsieur. Aimez moy, mandez moy si vous avez reçu mes lettres, et soyez sur que personne ne vous aime et ne vous honore plus parfaitement que moy.

Remond de Montmort.

Ce 2 Janvier.—Dans ce moment Monsieur je reçois une lettre de vous dattée du 6. x^{bre} Je ne sçai pour quoy elle a ete si longtemps en chemin. Je vois avec plaisir que vous avez trouvé mes sommes telles que je les mar-

quis dans ma lettre. Le 1^{er} terme de celle-
cy — $\frac{1}{123} + \frac{2}{345} + \frac{3}{567} + 4 = \frac{1}{4}$ ne peu-
vent etre $\frac{1}{13}$ l'ordre le fait voir, et l'analogie
c'est ce qu'on apelle *lapsus calami*. Je verrai
avec plaisir comment vos methodes donnent
ces sommes. Aussitot que je serai a Paris, je
ferai de la feuille que vous m'avez envoyé,
l'usage que vous m'avez marqué. J'en ferai
part a toutes les personnes qui ont votre excel-
lent livre. Je suis ravi d'apprendre que Mr.
Moivre que j'aime beaucoup, pense a moy,
mais je suis en même temps bien faché de sça-
voir que sa santé n'est pas bonne. Que ne fait-
il sa nouvelle edition en Latin plutot qu'en
Anglois. Des livres excellens comme doivent
etre tous ceux qu'il donnera doivent passer
chez toutes les nations. La premiere lettre
que vous me ferez l'honneur de m'ecrire,
adressez la s'il vous plait dans le cul de sac de
Guimenè. Vos lettres me font un plaisir infini,
Monsieur. Donnez moy souvent de vos nou-
velles et adjoutez-y la faveur de me croire plus
que personne du monde entierement a vous.

Je ferai vos complimens a Paris, et je ne manquerai pas de vous ecrire quand j'y serai arrivé, et je vous manderai toutes les nouvelles des sciences que je pourrai apprendre.

From the same, dated April 12, 1716.

JE viens d'ecrire a Mr. Pigault et a Mr. Minet, au 1^{er} pour sçavoir s'il voudra recevoir notre panier de vin et pourra le faire rendre a Mr. Minet. Au 2^e pour sçavoir s'il pourra le retirer d'entre les mains de Mr. Pigault, et nous le faire remettre. Ce seroit dommage que ce bon vin fut bu par des commis de vos douanes : etant destine pour des bouches philosophiques, et la belle bouche de Mademoiselle Barton. Je suis infiniment sensible a l'honneur qu'elle me fait de se souvenir de moy. J'ai conservee l'idée du monde la plus magnifique de son esprit, et de sa

beauté. Je l'aimois avant d'avoir l'honneur de la voir comme niece de Mr. Newton, prevenu aussi de ce que j'avois entendu dire de ses charmes même en France. Je l'ai adoré depuis sur le temoignage de mes yeux, qui m'ont fait voir en elle, outre beaucoup de beauté, l'air le plus spirituel et le plus fin. Je crois qu'il n'y a plus de danger que vous luy fassiez ma declaration. Si j'avois le bonheur d'estre auprès d'elle; je serais aussitot et aussi embarrassé que je le fus la 1^{re} fois. Le respect et la crainte de luy deplaire m'obligeroit ce me taire et a luy cacher mes sentiments. Mais a 100 lieues loin et separé par la mer je crois qu'un amant peut parler sans etre temeraire, et une dame d'esprit souffrir des declarations sans qu'elle puisse se reproché d'avoir trop d'indulgence. Il vint icy il y a quelques jours une personne de sa part. Je n'y etois pas, vous pouvez croire qu'il fut bien recu par Mad^{me} de Montmort aussitot qu'il se fut nommé de Mad^{elle} Barton. Il ne voulust point dire ce que l'amenoit, il dit

seulement qu'il reviendroit. Mad^{me} de Mont-mort jugea que c'est une personne qui fait icy des commissions pour des personnes de qualité d'Angleterre. Je voudrois bien que Mad^{elle} Barton voulust m'honorér du soin de luy faire les emplettes et de me faire son comissionaire. Outre le plaisir de servir une si belle personne j'aurais celuy de m'acquitér envers Mr. Newton d'une partie des obligations que je luy ai.

J'ai ecrit en Allemagne et j'ay proposé vostre probleme ou il s'agit de trouvér une courbe qui coupe a angles droits, et telles que sont exprimées par cette equation $z z d d s e = = 2 x d z^2$. Mr. Nicolle y-doit travaille aussy. Pour moy cela me passe. J'ay pourtant rappellé mes anciennes idées sur ces problemes des trajec-toires, et j'ay trouve quelques problemes assez curieuses, par ex: l'analyse de celuy qui es proposé dans les Journaux de Leipsic, page 473.—“*Quæritur curva quæ omnes parabolas eodem axe extrectas suaque latera respectivis verticum a puncto fixo distantiis æqualia habent.*”

“tes ad angulos rectos trajicit.” La trajectoire est une courbe geometrique très composée. Si au lieu du probleme proposé par Mr. de Leibnitz, les hyperboles qui ont même centre et même sommet mais differens parametres, on suppose même sommet, *meme parametre*, mais que les contres changent, le probleme me pa-roist devenir extremement difficile a cause de l'embarras de separer les indetermines dans cette equation differentielle, $2xydx = axdy - 2yydy$. Je n'en scay point le se-cret.

Voicy un petit prob. que je vous propose parcequ'il ne vous tiendra pas un quart d'heure. Deux nombres etant donnés α et ϵ dont l'un par ex. soit plus grand que l'unité, et l'autre ϵ plus petit que l'unité, trouvér le produit que resulte en multipliant tous les nombres possibles plus grands que ϵ et plus petits que α . Je l'ai trouvé par le se-cours de vostre belle suite $\frac{1}{z-c} = \frac{1}{z} + \frac{c}{zz+d} + \alpha$. Je vous dirois ma solution mais il vaut mieux vous laisser le plaisir de la cher-

chér. Mr. de Fontenelle qui dina hier icÿ et avec qui j'ay bu la santé de vous Mons. et de tous vos illustres me dit qu'il avoit fait reponse a Mr. Halley. Mr. l'Eveque de Troyes m'a dit qu'il vous avoit ecris. Je serois curieux de sçavoir quelle raison Mr. Moivre peut avoir pour ne me plus ecrire apres m'avoir ecris deux fois depuis mon depart d'Angleterre. Tachez de decouvrir confidemment quel usage il fait de mes 10 theoremes dont je luy ai fait part il y a deux ans, et qui se trouveront apparemment dans son livre accomodés a sa manière. S'il rapportoit par hazard mes solutions comme de moy il y faudroit faire les petites corrections dont je vous ay fait part. Secret et discretion sur ces bagatelles je vous en prie. Je m'en rapporte a vous mais ne faites pas semblant que je vous en aie parlé. Dans son petit traité *de mensura sortis* il a bien pillé mon livre sans me nommér. Il en pourroit peutetree encore bien faire autant a l'egard de la 2^{de} edition et des 10 theoremes. Ces tours de passe passe sont plus pardonna-

ables aux personnes dont le metier est d'estre scavant. Au reste je l'aime et il est tres bon homme, bon jour Monsieur je vous embrasse de tout mon cœur.

Remond de Montmort.

A Paris ce 12 Avril, 1716.

Letter to Brook Taylor, from —— Bossuet, Bishop of Troyes, dated June 29, 1716.

MONSIEUR,

Je suis tres mortifié d'apprendre par une lettre que reçoit de vous Mr. de Montmort que vous n'avez pas reçu celle que j'ay eu l'honneur de vous ecrire il y a plus de deux mois. Je l'avois adressée à Londres ou Mr. de Montmort m'avoit dit que vous l'etiez.

J'espere que cellecy aura un plus heureux sort, et je la remets en mains propres de notre

amy pour vous etre envoyée. Je vous rends milles actions de grace, de la part que vous avez bien voulu prendre a l'honneur que l'on m'a fait, honneur que je ne meritois, ni ne desirois. La louange que vous me donnés a la fin de votre lettre est trop flatteuse pour un homme de mon caractère pour n'en pas sentir toute la force, et pour ne pas desirer infiniment la merité. Permettés moy de la regarder comme un vray leçon qu'il faut que j'ay toujours devant les yeux. J'ay été très sensible a la marque d'amitié et de souvenir que vous avez bien voulu me donner en cette occasion. Il suffit de vous avoir connu une fois pour vous estimer et vous aimer autant que vous le merités. J'aurois une véritable joye si je pouvois esperer de vous revoir encore honnorér ma petite maison de campagne de votre presence. M. et M^{dme} de Montmort ont bien voulu ce printemps y-venir passer quelques jours. Nous y avons souvent parlé de vous, et toujours regretté de ne vous y-point voir. Continués je vous

supplie de m'accorder quelque part dans votre amitié dont je connois tout le prix, et me croyés pour toute ma vie avec un sincere respect,

MONSIEUR,

Votre tres humble et obeissant serviteur,

L'Abbé Bossuët, nommé Ev. de Troyes.

A Paris ce 29^o Juin, 1716.

*Letter to John Taylor, Esq. of Bifrons, Father to Brook Taylor, from the Count de Montmort,
dated May 28, 1717.*

MONSIEUR,

J'attends incessamment le quarteau de vin de Pierry que Mons^r. votre fils m'a demandé pour vous; j'y joindrai selon vos intentions cent bouteilles de Mulsan dont je crois que vous serèz content, et je vous marquerai le

jour du depart pour Calais a l'adresse de Mr. Pigault ainsi que vous le souhaitez. J'envoye a Mr. votre fils l'elogie de Mr. Leibnitz que je crois luy fera plaisir. J'y joins un volume qui vient de paroître de pieces de Clavecin très estimées en ce pays. Il sera a l'usage de Mademoiselles vos filles qui en jouent tres bien a ce que j'ay appris. Je suis bien faché Monsieur que la santé de Mons^r. votre fils ne soit pas bonne, je l'aime extremement et ne l'estime pas moins. Il s'est fait un grand nom dans les sciences, et tous ceux qui les aiment ont interêt a sa conservation. C'est un homme rare qui vous fait honneur et a toute sa nation. Si sa sante ne se retablit pas entièrement par l'usage des eaux d'Aix la Chapelle et de Spa, je vous invite Mons^r. a nous l'envoyer. L'air de France est bon aux Anglois. Ma terre est dans un tres bon air, peutetree que 3 ou 4 mois de sejour avec nous luy rendroient une santé parfaite. Nous en aurions tout le soin que vous en pourriez avoir vous même. Il a pu vous dire que nous sommes sobres et assez sages. Il mene-

rait avec nous une vie reglee, et qui ne seroit pas sans plaisirs. Tous mes amis qui l'ont vu l'aiment pour la politesse et la douceur autant que pour l'agrement de son esprit et l'etendue vaste de ses connoissances. Il n'y auroit pour luy dans ce voyage ni beaucoup de depenses ni beaucoup de fatigue. Il iroit de Spa a Charleville en traversant le Luxembourg, et delà n'auroit pas plus de 25 ou 30 lieues pour venir a Montmort. Il se perfectionnerait dans la connoissance de la lange Francaise. Je me recommande Monsieur a l'honneur de votre amitié. J'assure de mes humbles respects Mad^{elle}s vos filles, et vous prie de croire que personne n'est plus parfaitement que moy,

MONSIEUR,

Votre tres humble et tres obeissant serviteur,

Remond de Montmort.

J'aurois envoye relié le recueil de Couperon mais Mr. Lully qui s'en charge ne l'auroit pas porté si commodement.

*To Dr. Halley—from a Copy in the Hand-writing of Brook Taylor, dated Bifrons,
Oct. 21, 1718.*

SIR,

This being the time that the Gentlemen of the Royal Society usually return to their ord'nary meetings, I cannot reflect upon it without very great concern that my private affairs will not permitt me sooner than three weeks hence to attend their service, as my duty, being Secretary, requires. I find that my circumstances for the future will be such, that I shall not be in London long enough to discharge the duty of that office so completely and so punctually as I ought to do, and as I fain would do, to shew how sensible I am of the honor I enjoy in having been thought worthy of it. Wherefore I beg the favor of you to present my most humble duty and thanks to the R^t Hon^{ble} the President and

Fellows of the Royal Society, for the honors they have hitherto been pleased to bestow upon me; and to pray them at their next election to be pleased to appoint some other person to be Secretary in my stead. I am very much concerned that I can no longer enjoy the honour of that character, there being nobody more zealously disposed and desirous to serve the Royal Society, in any manner, than,

SIR,

Your most humble servant,

Brook Taylor.

The following line I will interpret when I see you :

$$r'' - 1 + 4nr^2 + vr^3.$$

N. B. In the different controversies between B. Taylor and Bernouilli, the Editor has reason to suppose that the following particulars have never been published.—They are preserved in Brook Taylor's handwriting.

Extracts from Mr. Jo. Bernouilli's Letters to Mr. de Montmort, to be communicated to Dr. Taylor, dated July, 1719.

—“ J'estime Mr. Taylor pour le genie tout particulier qu'il fait paroître dans ses productions, je vous prie de luy faire mes complimentens, et de luy dire que je luy offre mon amitié s'il la daigne acceptér. Mais je l'exhorter a s'abstenir a l'avenir de ces sortes d'expressions dont il s'est servi dernierement dans l'exorde de sa solution des trajectoires imprimées dans les transactions, parceque ces expressions la marquent trop de mepris pour

nous autres etrangers, et avec cela une aigreur indecente a un galant homme. Si Mons. Taylor veut entrer en discussion avec moy sur des affaires de mathematiques mais d'une maniere honest et paisible je promets de respondre avec tous les egards qui luy sont dus. Quand a la reduction de cette quantité

$$\frac{\frac{\delta}{z^{\lambda^n}-1} dz}{e+fx^n+gz^{2n}} \text{ ou de cette autre } \frac{\frac{\delta}{z^{\lambda^n}-1} g z}{e+fx^n+gz^n+bz^3n}$$

que Mons. Taylor propose aux Geometres de l'Europe. Il me semble qu'il serait juste de m'exempter aussi bien que Mr. Newton d'un pareil travail et nous laisser reposer l'un et l'autre a l'ombre de nos lauriers selon les expressions obligeantes de vostre lettre, d'autant plus qu'il n'y a je crois personne qui ait plus travaille que moy sur la matiere des reductions. C'est sans doutte de mes travaux meme que profite Mons. Taylor; et s'il a pousse plus loin mes productions il devroit m'en sçavoir gré parceque je luy ai rompu la glace, sans quoy il n'auroit peutestre pas pensé a ces choses la. Si vous voulés prendre

la peine de lire ce j'ay communiqué autrefois dans les memoires de 1702 et dans les actes de Leipsic en 1703. Pour integrér les fractions rationnelles (ce que vous plut alors extrêmement si je m'en souviens bien) vous avoueréz qu'il y a beaucoup d'apparence que Mr. Taylor ne se sera point servi d'autre methode que de celle que j'y ai enseignée, et que ce qu'il y aura trouvée de surcroit ce sera peut-être quelque modification de ma methode pour empêcher qu'on ne tombe en des limitations par les racines imaginaires pour ses exemples proposés, *ou je me fais fort de trouver aussy une telle modification.* Et si Mr. Taylor en doutte, il n'a qu'à en faire l'epreuve: voicy le moyen que je propose. Nous remettrons chaq'un entre vos mains une somme d'argent. Par ex: 50 guinées. Je vous envoirois ma solution, et vous en serez juge. Si elle est juste vous me renvoirez mes 50 guinées, avec les 50 guinees de Mr. Taylor. Si ma solution n'est pas legitime; ou que je ne puisse en trouvé dans le temps dont en

conviendra, je consentirai que vous remettiez a Mons. Taylor les 100 guinées. Je m'engage a luy rendre la pareille. C'est a dire que de mon coté je luy proposerai aussy un probleme dont je possederai la solution : et nous parierons de meme, en sorte que s'il le resoud legitimement dans le temps stipulé il aura mes 50 guinées, s'il n'en vient pas a bout, j'aurai les siennes. Je me soumets comme j'ay dejà dit, a votre jugement parceque je vous connois integre et connoisseur. Faites cette proposition a Mr. Taylor. Il l'acceptera infailliblement n'y ayant qu'a gagnér pour luy et rien a perdre. C'est la le party le plus court a prendre pour n'etre pas continuellement inquieté par des nouveaux problemes. Je vous supplie donc de dire a ces Messieurs que je leur declare une bonne fois que desormais j'imiterai Mr. Newton, en ce que je garderai le silence quoy que puissent dire Mr. Keil et ses semblables. Et je ne ferai aucune attentions aux problemes qu'ils pourroient proposer a moins qu'ils n'aient le

courage d'accepter un parti tel que je l'offre
a Mr. Taylor."

The foregoing Extracts were received by Dr. Taylor, the 4th of Feb. 1719, and the next day he returned the following Answer:

—“ I am wonderfully obliged to Mr. Jo. Bernouilli, for his great condescension in being pleased to offer me his friendship. That offer would have been much more kind, if he had made it, before he was pleased to charge me with plagiary in the *Epistola pro Eminente Mathematico*, or treated me again in the free manner he does, in his last treatise on the *Isoperimeters*. As to the preface to my solution of the prob. of the Trajectories, whose sharpness he complains of; I own that I intended it, as he takes it; that is, I intended to shew an indignation at the unreasonableness of his proceeding; and those other Gentlemen, whoever they be, who could not forbear to quarrel with the whole English

nation, upon account of a dispute, that only concerned two private persons—Sir Is. Newton and Mr. Leibnitz ; and who were so stupid in their manner of reasoning, as to think that dispute might be determined, or in any matter affected, by a challenge made to persons who were not at all concerned in it: because, forsooth, they happened to be of the same country with one of the parties. Sir Isaac Newton himself was owned to be excepted from that challenge, as having long neglected those kind of speculations. The concern I had for the honour of my country, provoked me to enter the lists. But I did not design to have it thought, that I intended to make a comparison between our abilities and the abilities of those Gentlemen. They made the comparison who gave the challenge; and not I, who only shewed that we had no reason to be afraid of it. And I was so far from shewing myself to approve of that foolish way of comparing of countries, that I purposely avoided mentioning of Germans, or

any other nation, besides my own that was challenged; that my intention might be understood only to be confined to those particular persons, who were concerned in this matter. I named nobody, and knew of nobody, in particular, *but Mr. Jo. Bernouilli*; though I suspected his son and nephew to be concerned with him. But I have no particular objection myself to either of those gentlemen. It is plain now, by his son's confession, that I was not mistaken, in supposing that reflection on me in the *Ep. pro Em. Math.* to proceed from him; and I could not help believing, that he was the occasion of that most injurious and unfair account of my book in the same *Acta*. At least, I evidently saw, that it proceeded from the spleen that was raised by the dispute with Mr. Leibnitz: and these two things, I own, provoked me to be more free in my expressions in that Preface. But I never concerned myself so far in that controversy, as to give my judgment of the merits of the cause, and

contend about it, as Dr. Keil has done: nor had I ever said one word relating to it, good or bad, that could occasion such usage of me, before that Preface. I shall take occasion, very soon, to vindicate myself publickly from the ill usage Mr. Bernouilli has bestowed on me. As to his challenges, I will have nothing to do with them; for it is far from my intentions, ever to set my abilities in comparison with his. I never said, that I believed Mr. Bernouilli could not solve Dr. Keil's problem: and when I told you, "I could do it," I never intended he should understand it, as if I thought I had done a thing which he could not. I will easily believe, his solution may be better and more general than mine, and therefore will not put mine in competition with it. I will send it to you to satisfy your own curiosity; but desire you will never send it to him. That he may not have the least occasion to think I make any comparison with him, I do not intend to publish it at all. As to the other

problem, about the Quadrature of Curves, it is not properly mine: for the thing is done by another, some years ago; that is, by Mr. Cotes; and is going to be printed in his works, which will make the world sensible of the very great loss of so extraordinary a genius. I have never yet seen his solution: but upon the information I had of it, I considered the matter, and solved it in the cases I sent you, and several others, and have a demonstration of the possibility in all cases; though the actual calculation is too intricate. I know very well what Mr. Bernouilli and Mr. Leibnitz have done in this matter; but there is nothing very extraordinary in their discoveries, nor nothing new. For they have only spent a great many words, without any addition of matter, on a thought Sir Isaac Newton had already made use of in his Tables of Quadratures (I think it is in the 6th form), where he gives the quadrature of this form $\frac{z^{\frac{1}{2}}y-1}{e+fz^n+gz^{2n}}$. Mr. Leibnitz pretends to demonstrate the impossibility of what

Mr. Cotes and I have done; and Mr. Bernouilli seems to have acquiesced in that pretended demonstration, by his having shewed nothing to the contrary, and by his silence: but if he knows better (and I am very sensible he has much improved in his skill since that time), he has now an opportunity of shewing it, before Mr. Cotes's papers are published.

It is impossible to express admiration enough at Mr. Bernouilli's excess of vanity, which makes him imagine himself to be the sole instructor of all the world. I can easily forgive his pretensions to have instructed me, because he has now lately pretended to have taught Sir Isaac Newton himself: for I cannot believe it to be without his knowledge, that his friend *Crusius* has asserted, in express words, Sir Issac Newton to have learned second and higher fluxions of him. But to abstract from what is particular to myself: let any one ask him, if there be nothing in the French Memoirs, or in the Leipsic Acts

themselves, but what he has done? Will he allow nothing to his hero Mr. Leibnitz, or to his pupil, the Marquis de l'Hopital? the accident of whose being taught mathematics by him, has done him more honour, than any thing he ever else did in his life can deserve; and whose most delicate and curious performances, are too unjustly so much imputed to his master. His own brother, it is evident, he will allow to deserve but little reputation, by the usage he gives his memory. But must Mr. Varignon, Mess^{rs}. de la Hire, de Lagny, &c. of your Academy, from every one of whom one may learn more elegant and more sound mathematics, than from him, be allowed nothing by him? Is it impossible for a young student to have learnt any thing from these persons, as well as from him? Not to mention what an Englishman may have learnt from Sir Isaac Newton's *Principia and Quadratures*, from our own *Transactions*, and from other books of our own authors; which are enough to teach one,

at least, as much as Mr. Bernouilli can pretend to know. Having already made my letter so long, I will be but short in giving you my reflections on his late tract on the Isoperimeters. He has at last found out, that his first essays on that matter (in Mem. de l'Academie, 1706) are somewhere faulty: but though he has examined them all over with the greatest care, he cannot tell where. To make amends for this, he pretends to give a rare new solution. To pass this the better upon the world, he does all he can to discredit the performance of his deceased brother; and least my solution too should be taken any notice of, you know in what manner he treats me. But when one comes to examine this wonderful performance, and these vast new discoveries, which the world must needs be so much obliged to him for the discovery of; what is it? why nothing but the very solution of his brother, put in other words, and delivered in a shorter method. His manner of explaining the thing, indeed,

is elegant ; but the whole form and substance of the analysis (and it is in that a solution consists) is the very same with his brother's. And as to the expedient he so much values himself upon, by which he avoids third differences (and about which he runs down his brother so much), it is plainly nothing but the very same thought which I myself have made use of, in my book, pag. 113. lin. 2, 3. penult. et antepenult.; and have given sufficient hints of it in other places. This discovers the reason why he was not contented only to run down what I have done in this problem, but he must needs also condemn my whole book. For if that book be so very obscure, as he says it is, that the best artists, those who are already acquainted with the subjects, cannot well understand it, to be sure no one will discover this piece of theft. You may let Mr. Bernouilli know all this : and besides, that when I have done myself justice in these points, I shall think myself not obliged to take any more notice of him,

let him treat me in what manner he pleases : for it is not my business to compare myself, and to spend my time in disputes with any body ; but to pursue my own curiosity, in the way that is agreeable to me, &c. &c.

N. B. The above Letter from Brook Taylor doth not appear to have been at any time printed— Certain Extracts from Mr. de Montmort's Letters, conveying the sentiments of Jo. Bernouilli, and afterwards printed, were sent in the following Letter to Mr. Professor Keil.

May 7, 1720.

SIR,

I think you are very right in the method you propose to use towards J. Bernouilli. As to the Extracts I sent you, I fancy you may print them, because Sir Isaac Newton says, the letter of Montmort to me, which they threatened you with, is already printed. I shall give Mr. Jones a copy of it; and if you will, you may print it with the rest. I

believe he has my papers, where I demonstrate the possibility of the Quadrature of all Curves, whose ordinates are expressed by a rational fraction, such as $\frac{a + b x^n + c \tilde{x}^n \text{ &c.}}{A + B x^n + C \tilde{x}^n \text{ &c.}}$ and I will desire him to let you have a copy of it. I have looked over Bernouilli's solution of my problem in the Leipsic Act, for June last, and find his seven first theorems, which he values so much, are only cases of Sir Isaac Newton's Quadratures; and the 8th is one of his first propositions, extended by the Quadratures: this is a good proof how little he understands that book. I have examined what you desired me in Herman, and find it right, but so sadly expressed, that it is an easy matter to suppose him all the way making mistakes. I am,

Your most humble servant,

Brook Taylor.

*Letter to Brook Taylor from Lord Bolingbroke,
dated May 1st, 1721.*

A la Source près d'Orleans.

I send you, dear Sir, a letter, which came hither for you by the last post, and I thank you, at the same time for yours. My health is, I thank God, in a much better state. I would not fail to use Dr. Arbuthnot's prescriptions, if I found any occasion for them. If you see the Abbé Conti, ask him whether it be true, that there is at Venice a manuscript of the History of the Cæsars, by Eunapius, of whom it is pretended, that Zosimus was only an abridger, as Justin was of Trogus Pompeius, or Hiphistion of Dion Cassius. Adieu. Dear Sir,

I am, most faithfully,
Your obedient, humble servant,

Bolingbroke.

*Letter from the Abbé Conti to Brook Taylor,
dated Paris, May 22, 1721.*

MONSIEUR,

Je m'en vais vous expliquer en peu de mots les raisons qui m'ont engagés dans la querelle de Mons. Newton et de Mr. Leibnitz. Mr. Newton me pria d'assembler a la société les Ambassadeurs et les autres Ministres Etrangers. Il souhaitait qu'ils assistassent a la colation qu'on devoit faire des papiers originaux, qui se conservent dans les archives de la société avec d'autres lettres de Mr. Leibnitz. Mr. le Baron de Kirmansegger vint a la société avec les Ministres des Princes; et après que la colation des papiers fut faite, il dit tout haut, que cela ne suffisoit pas, que la véritable metode pour finir la querelle, c'étoit que Mr. Newton luy-même ecrivit une lettre a Mr. Leibnitz dans laquelle il luy proposât les raisons, et en même temps luy demandât des reponses directes. Tous

les Ministres des Princes que étoient présent gouterent l'idée de Mr. Kirmansegger; et le Roy même a qui on la proposa le soir, l'aprouva, ayant dit tout cela a Mr. Newton, cinque ou six jours après il m'escrivit une lettre pour envoyer a Mr. Leibnitz a Hanover. Mr. Newton, peut il dire que je l'ay prié de m'adresser cette lettre? cependant la nécessité de l'envoyer a Hanover, et de l'accompagner d'une des miennes m'engagea dans la querelle. La lettre qui fût portée à Hanover par le Baron de Discau, resta plus d'un mois a Londres. Mad^{me} la Comtesse de Kirmansegger la fit traduire en François par Mr. Costa: le Roy la lut, et l'aprouva fort, en disant que les raisons étoient très simples et très claires, et qu'il étoit difficile de répondre a des faits. J'ay lu a Mons. Newton la lettre que j'escrivois a Mons. Leibnitz; c'est Mr. de Moivre que me l'avoit corrigé et j'en conserve encore la brouillon: Mr. de Moivre y-avoit ajouté quelque chose a l'égard de la maniere équivoque dont Mr. Leibnitz avoit

proposé le probleme. Mr. Leibnitz fut fort irrité de la lettre que je luy avois envoyé, comme il paroit par sa reponse, et par des expressions assez fortes qu'il avoit avancé contre moy dans ses lettres a S. A. R. la Princesse de Galles. Il ecrivit plusieurs lettres pour sa justification que j'ay donné a Mons. Newton a proportion qu'elles m'ont tombé dans les mains ; Mr. Newton en fit une espece de reponse qui fut imprimée avec la premiere lettre a la fin de l'Histoire des Fluxions ; les lettres que Mr. Leibnitz m'avoit adressé, furent aussy imprimées dans le même livre ; et Mr. Leibnitz en fit non seulement ôté mon nom ; mais encore ne me fit aucune part qu'on les imprimoit. Quand Mr. des Mesaus luy proposa de les imprimer de nouveau en Hollande, il luy donna son approbation, et dit même qu'il luy fourniroit quelque autre petit papier. J'ignore ce qui est arrivé d'après, parce que j'ay quitté l'Angle-terre. On dit que Mr. Newton a changé de sentiment et qu'il se plaint de moy de l'avoir

engagé dans la querelle avec Mr. Leibnitz : je le prie tres humblement de reflechir a des faits qui sont incontestables ; et par lesquels il paroit assez que je n'ay eu d'autre part a la question qu'autant qu'il voulut bien m'en faire. J'ay essuyé tous les reproches des Allemans, et de Mr. Leibnitz luymême pour soutenir ses raisons. Je les ai aussy soutenu en France ou malgré tout ce qu'on à l'adresse de luy ecrire en Angleterre, on n'est pas trop dans ses interets comme il pense. J'ai pensé un jour me brouillér avec un grand Mathematicien, chez une Dame, ou on parloit de cette dispute ; il soutenoit que tous les argumens du *Commercium Epistolicum* n'étoient pas concluans ; et que Mr. Newton n'y avoit aucune part, non plus qu'aux lettres qu'on avoit imprimées par son ordre. J'aurois bien d'autres choses a dire la-dessus : mais je suis las d'entendre parlér d'une matiere qui n'est pas agreable. On a voulu me commettre avec Mr. Newton, et je ne sçay pas pourquoy : je l'ay toujours honoré et respecté ; et

je luy ay toujours dit la vérité sans aucun
intérêt: mais si les plaintes continuent, je
ne pourray pas me dispensèr de faire imprimer
la simple histoire d'un fait, qui fera voir
au public que je n'ay pas pretendu me meler
dans cette querelle pour acquerir du nom.

Mr. je suis,

Votre très humble,

et très obeissant serviteur,

Conty.

A Paris ce 22 May, 1721.

Letter from Lord Bolingbroke, dated Nov. 28,

1721.

The letters which accompany this, will
explain to you why I have been so long
without answering yours of the 13th of the
last month; and the same reason has been in

part the cause why, now I do write to you, I say nothing about those thoughts of an ingenious Clergyman, which you was so kind as to communicate to me. Ever since your letter came to my hands, I have had too much company, and my time has been too much broken, to be able to study as usually, or to examine any such matter, with due attention. Besides, this new explanation of Daniel's Prophecy is founded on a new reading of the text, of which, for want of languages, I cannot judge: the years, as this Commentator lays them down, do, I believe, fall in with the vulgar reckoning, and perhaps any description almost of time may fall in with this reckoning, by the rules which have been followed, in forcing this unwieldy passage to an application. Upon this occasion, I'll tell you that I have very near done, for my whole life, with all inquiries into remote antiquity. My intention was to see the foundations of those historical and chronological systems, which have been erected

with so much learned pains in our western world. I have seen them, these corner stones, and I think I have examined them enough to be sure, that he who cannot content himself to employ his time about consequences, drawn from principles evidently begged, ought not to employ it in this kind of erudition. If ever we meet, I'll trust to your candour what I have observed, and what has fixed my thoughts, and put an end to all my curiosity on this subject; after which you may perhaps be of opinion (if you are not so already), that when Varro fixed the famous epoch (as Censorinus says he did), this learned Roman could hardly have any better reason for doing so, than the desire of including the foundation of his city within that period; from which, the fabulous age being ended, the historical age began. I have lately read a book, called, an Enquiry into the Causes and Origin of Moral Evil: it runs in my head, that the author has not taken all the advantages which, as a philosopher, he

might have taken, against the defender of the Epicurean and Manichean systems; and sure it is, that as a Divine, he lies under some additional disadvantages, easily understood, and therefore not necessary to be explained. Is there not a treatise, writ by the same author, concerning Physical Evil? I take you at your word, and send a secretary of mine to receive your directions about some books, which I have writ to him for. The Abbé, who is here, and I, agree better about poetry than we do about philosophy; and some disputes which we have had, make me resolve to study certain points which I imagine that both of us have talked of, more than we have thought of. How charmed should I be to see you here, if you was not better placed, and better employed where you are! M^e. de Laylus writes to you about a thing, which I join with her in desiring you to do, if it be to be done. You spoke, when you was in this country, of the Chinese manner of making fireworks, which are infinitely

more admirable than ours, and I think you mentioned one Mr. Pound, who had the secret; be so good as to send it to M^{de}. de Caylus. It is for a young person, whom you will not be sorry to oblige. Adieu, dear Sir.

Aupentis, ce 9^{me} Jeuillet, 1721.

Votre lettre du 22^{me} de Juin que je recois dans le moment Monsieur m'a fait et a votre amy d'autant plus de plaisir, que nous etions fort inquiets pour votre santé j'allois meme écrire à Mr. Hus pour m'en informé; je suis bien faschée que vous ayés trouvé tans de difficultés dans vos affaires; mais avec de l'amour et du courage dequoy ne vient on point à bout? Nous vous regrettons tous les jours; vous seriés difficile à remplacer au milieu du plus grand monde; jugés des vide que votre depart a laissé dans notre solitude:

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mais je prefere vos interets aux miens, et je suis persuadée que votre presence etoit absolument necessaire pour terminer une chose dont vous desirés la fin avec tans de raison. Vous ne me parlés point de votre santé, je souhaite qu'elle soit parfaitte ; j'ay bien des graces a vous rendre de vos attentions ; il seroit honteux d'avouér que le cidre me fera autant de plaisir que les livres, il en est pourtant quelque chose : on m'a mandé de Paris qu'il y paroist un livre intitulé le Conte du Tonneau. Je ne doutte pas que ce ne soit une traduction de l'Anglois qui surement aura perdu beaucoup des graces de l'original. Je traduits tous jours, et je m'admire seule car votre amy est du moins aussy aride louangeur sur mon Anglois, que vous l'etiés, et beaucoup moins patient. Dans ces lieux je ne vous diray point de nouvelles du Luxembourg car je n'en ay pas eu depuis mon depart de Paris. Dieu veuille qu'il nous environnent de bonnes de votre costé, a la fin de votre Parlement. Je prefererois le plaisir de

vous faire boire du vin de Bourgogne de l'autre costé de l'eau, a celuy de boire vostre cidre sur les bords de la Source. J'espere que nous vous y etablirons dans ce mois-cy, et que sy nous y demeurons, vous n'oublires pas que vous y avez une chambre. Je conte meme que nous vous y verrons avec assez de gayeté et de santé pour ettre a l'abry de ma tirannie sur le vin de Champagne. Personne Monsieur ne vous souhaite tant de bonheur que moy, car personne ne connoit mieux combien vous en merités. Cy vous avés quelques comissions a donner en ce pays cy, soit pour vous, soit pour Mlle. Brigette vous pouvis conté sur moy, come sur la personne du monde qui vous estime et vous honnore le plus parfaitement, et qui est avec le plus de verité,

Votre tres humble,
et tres obeissant servituer,
Marcilly de Villette.

Ma fille qui est icy me prie de vous faire mille tres humbles complimens de sa part.

Letter inclosed in the foregoing.

Je profite s'il vous plaist ma tres chere tante de la liberté que vous m'avez donnée de vous envoyer un plus ample memoire sur mon affaire de Morthermer, ce qui m'a fait esperer qu'on pourroit trouver en Angleterre quelques papiers concernants cette terre c'est que je vois qu'en l'an mill trois cent cinquante noeuf elle estoit possedée par Guy Senechal Chev^r. Baron de Morthermer qui mourut la mesme année. Il laissa une fille sous la tutelle de sa femme qui se remaria au Seigneur Dangousse Baron de Gerçay Anglois, et maria sa fille Catherine Senêchal avec le Seigneur Jean Arpadaine aussi Anglois, lesquelles ensemble suivirent le Prince de Galles en Angleterre lorsque l'Aquitaine futt remise à l'obéissance du Roy de France. Il me paroit vray semblable qu'ils auroient pu emporter avec eux des pieces concernant la fondation du chapitre de Morthermer et autres droits de

la terre qui me seroit aujourdhuys tres necessaires contre les chanoines de Celicula, qui me font des procés considerables et embarrassants d'autant qu'il nous manque les papiers les plus necessaires pour nous bien deffendre. Si vous voulez bien ma tres chere tante faire encore chercher sur cela peutestre seray je plus heureuse que la premiere fois; si de mon cotté vous me fournissiez quelque occasion de vous etre utile vous jugez bien que je l'embrasserois avec tout l'empressement possible. S'il arrivoit que Mr. de Saulnay fust dans le dessein de venir en Poitou pour s'accomoder avec Mr. du Treau qui m'a assuré estre tres dispose a faire ce que pouvoit luy convenir, il foudroit s'il vous plait me le faire scavoir, parceque si je pouvois estre au pays je luy offrirois avec grand plaisir ma maison et nous irions ensemble voir Mr. son beaufre. Enfin ma tres chere tante vous vous interessez pour luy; vous jugés bien que cela me suffit; et que je serois charmé de pouvoir vous prouver a qu'il point je vous

suis devoué et avec combien de respect j'ay
l'honneur d'etre, Madam,

Votre tres humble,

et tres obeissant serviteur,

La Roche Jaquelein.

From Lord Bolingbroke.

December 26th, 1723.

DEAR SIR,

Your letter of the 15th of November came to my hands just as I was leaving the country to come to this place; and since my being here, besides a little business, I have had some return of my illness, but it seems to be over, and was, I hope, nothing more than the last pang of an expiring malady. The good intelligence you are at present in with your father, gives me a most sensible plea-

sure; and I hope, that you will be able to settle your affairs at last, in such a manner as to make you amends for all the trouble you have gone through. When I endeavoured to assist you, I believed at that time there was power; I have had since some reason to believe there is none: and I had rather attribute to the want of this, than to the want of inclination, any coldness which you may find. The books were here at my arrival; and I am very thankful to you for them. I have gone through all that I proposed to myself, in the way of studying, wherein I was when you gave us your good company. I never intended to do more than to examine, as well as I was able, the foundations on which those Systems of Chronology and Ancient History, which obtain in our western world, are built, *à fin de sçavoir à quoy m'entenir.* I have done this; and I have no more desire to pursue this study any further, than I have to be a proficient in Judicial Astrology. Who can resolve to build, with great cost and pains, when he finds,

how deep soever he digs, nothing but loose sand? Some have been so pleased with an high and lofty situation, that they have ventured upon this project; for my part, I incline not to imitate them: and to carry the similitude a little further, when such buildings are raised, I may be tempted to take a cursory view of them, but I can by no means resolve to dwell in them, *a limine salutanda sunt.*

Since my being here, I have seen very few people; our friend the Abbot Conti but once; and then, he was so much out of order, that my conversation with him was very succinct. He has begun a Philosophical Poem, which will be finished, I believe, long before the Anti-Lucretius of the Card¹. de Polignac. Sir Isaac Newton's System will make the principal beauty of it. He recited the exorde to me, which I thought very fine; I need not tell you that he writes it in Italian. My fellow Hermit is very affectionately your humble servant: she desires you would, for the present, give yourself no further trouble

about the affair of Mons. de la Roche Jacqueline. Adieu, dear Sir. I am, with all possible esteem, ever most faithfully yours, &c.

*Inscriptions in the Gardens of the Chateau de la
Source, near Orleans, written by D. Boling-
broke, during his Exile.*

Propter fidem, adversus Reginam
et Partes

intemeratè servatam,
propter operam in pace generali
conciliandâ,
strenuè saltem navatam;
Impotentiâ vesanæ factionis
solum vertere co-actus,
Hic ad aquæ lene caput

sacræ

injustè exulat

dulce vivit

* H. M. B. 1722.

* Viz. Henry Marcilly Bolingbroke. This and the following inscription, in the hand-writing of Lord Bolingbroke, were inclosed in the foregoing letter.

Si resipiscat Patria, in Patriam
rediturus,

si non resipiscat, ubivis melius
quam inter tales cives futurus
hanc villam instauro et exorno

hic, velut ex portu, alienos
casus et fortunæ ludum
insolentem
cernere suave est.

Hic, mortem nec appetens, nec timens,
innocuis deliciis
doctâ quiete
et felicis animi immotâ tranquillitate
fruiscor.

Hic, mihi vivam, quod superest, aut
exilii, aut ævi. 1722.

Du Comte Raymond de Montmort.

A Paris ce 15^{me} Janvier, 1724.

MONSIEUR,

Voicy un de calculs astronomiques que Mr. de l'Ysle envoit a Mr. Halais, comme je ne suis pas en commerce de lettres avec luy, je vous l'adresse, permis à vous de le lire, si vous en avez envie; Mr. Halais ne sera pas fâché, peutetre, de voir ce qu'on a remarqué en France sur le passage de Mercure. Vous m'avez entierement oublié mon cher amy, je n'ay pas fait de même; et my Lord Boulinbrok vous dira, que je ne le vois jamais sans demander de vos nouvelles, il m'a dit que vous allez vous marier pour la seconde fois, je vous souhaite tout le bonheur possible; vous le meritez. On ne vous verra donc plus en France. Vos amis vous regrettent tous les jours, et vous en avez bien au Luxembourg, je viens de lire ce qu'on a fait contre vous dans les Actes de Leipsique, on

m'y fait entrer, je ne sçais pas comment; mais autant, que je puis concevoir, feu Mr. Varignon avoit mande a Mr. Bernouilli qu'il vous avoit demontre, qu'on pouvoit prendre le cercle pour un polygonne, et que j'avois esté le témoins de la demonstration; si vous en souvenez, il s'en faut bien qu'il convainquit l'un et l'autre. Il me semble même vous en avoir parle dans une lettre que je vous ecrivis dans ce temps la, mandez moy, si vous travaillez a votre ouvrage. Je le souhaite ardemment pour vous, et pour le public. C'est la véritable réponse, que vous pouvez faire a Mr. Bernouilli, et je ne doute pas, que la neteté, et la clarté, dont vous developerez vos idées ne le fassent enrager. On m'a dit, qu'on avoit fait en Engleterre quelques ouvrâges assez metodiques en mathematique, et en physique: dites moy ce que c'est; et si on a fait depuis peu, quelque nouvelle decouverte. On m'a dit aussy, que Mr. Newton imprime la Cronologie Raisonnée. Tout le monde l'attend avec bien de l'impatience.

faites luy mes compliments, je vous en prie;
 voicy une petit Sonnet que vous luy communiquererez ; j'espere qu'il en sera content ; car il verra l'attraction designé par l'amour qui regle le système de Mr. Descartes designé par Phaeton. Dans le Memoire de Leipsique, il aura vu si je suis du parti des Allemands :

“ Lasciami il curro Governar del giorno ”
 Disse à Febo l'Amor, “ e tosto sia
 “ Rectificata in ciel l'alta armonia
 “ Che Fetonte turbó con suo gran scorno
 “ Io diedi sede al cancro ed al capricorno
 “ Ed al corpo lunar l'obliqua via
 “ Io sterno al par del Caos ; ed Io con lumen
 “ Forzo al mondo l'equilibrio ; ed Io l'adorno.
 “ Disse ; ” e le Briglie imperioso stese
 E corresse l'Aurora, ed agli infiniti
 Fonti del lume il corso antico rese
 Ritornó i Pianet' ai primi siti
 Il Solar Orbe a perni scai s'apese
 E tal' fu poi qual' O Newton l'additi.

Par l'Abbot Conti.

From Lord Paisley.

London, April 4th, 1730.

SIR,

My not answering your letter sooner, is partly occasioned by its not having been sent to me from Witham, as soon as it might have been: though I am always glad to hear from you, I must say that the concern I am in for your loss, greatly damps the pleasure your letters always give. My family went last Thursday to Witham, and I am going to-morrow morning: the reason of my mentioning this is, to invite you thither; when my wife and I will endeavour to lessen your affliction, by not suffering you to indulge your melancholy; besides, your removing for some time from your house (especially a house, which from your recent loss can't but be unpleasing to you) will be for your health. I have a great many things to say to you, and to shew you, which I hope will contribute to

the alleviating your grief. As a friend, I beg of you to dispose of your family affairs so, as that you may come and stay some time with me: let me know the day you will come, and I will be sure to meet you at Chelmford: the sooner the better; for we are to go to the Duke of Devonshire's, at Chatsworth, the latter end of July, or the beginning of August, at farthest. In expectation of seeing you soon, I conclude with begging you to believe me,

SIR,

Your most humble servant,

and compassionating friend,

Paisley.

From Lord Bolingbroke.

April 7th, 1730.

Just before I received your letter of the 22d of the last month, I had proposed to Brinsden, who was going to meet his wines at Calais, that he should call at Bifrons, and send me some account of your health, situation, and amusements; for I do assure you, dear Sir, with the strictest truth, that no friend can be more truly concerned for the welfare of another, than I am for yours. Brinsden's health, which has been of late very bad, and in my opinion dangerously so, made him chuse to embark at London, and perform his whole journey by water. I wish to God, dear Sir, that I could alleviate, by sharing your grief, on the melancholy occasion mentioned in yours. To furnish you with philosophical reflections, would be impertinent in me: you know as well as I what the conditions of mortality are; and you have,

I am persuaded, steeled your mind against the effects of them, by anticipating them in your thoughts, even when they seemed at the greatest distance. The stoicks abused this method, till they became uneasy to themselves, and impertinent in the sight of others; but surely when it is guided, as it is dictated, by reason, it is a good one. May your daughter live to be an honor to her family, and a comfort to you! My poor wife, your good friend, continues in a very languishing way: God knows what crisis the fair weather, and a new regimen prescribed her at Paris, may create. I expect to have the account very soon, and it will determine my situation for this year. Adieu, dear Sir. Let me hear sometimes from you; and believe that I am, with true esteem and cordial friendship,

Your most faithful, humble servant,

H. Bolingbroke.

From the same.

April 19th, 1730.

I thank you, dear Sir, with all my heart, for designing me the favor of a visit in this retreat; where you will be most heartily welcome to one who knows the value, and who never thinks himself in better company than yours. I shall not be in town; but, if you please to send to John Brinsden, in Durham-yard, he will acquaint you with the several conveniencies which you may find of making this little journey. I expect you with pleasure; and am, with truth,

Dear Sir,

Your faithful,

and most humble servant,

H. Bolingbroke.

From the same.

Dawley Farm, June 24th, 1730.

DEAR SIR,

I hope I need not take much pains to be believed, when I assure you, that I expected you here with great impatience, after your return out of Essex. You must make me amends for this disappointment, when you return out of Kent. I am in daily expectation to hear, that your old friend is set out on her return home; for though her health be not very much mended, it is, I hope, sufficiently so to enable her to undertake this journey. As soon as I hear of her motions, I shall order my own; and you may be sure I shall not pass by you without seeing you.

I am, dear Sir,

With a sincere regard and true friendship,

Your most faithful, humble servant,

H. B.

Dawley Farm, Jan. 3d, 1730-31.

It is an age since we saw you, or heard of you: my dear Sir, let us know when you turn your steps towards London, and whether you do not design to make us a visit. I need not tell you how much you are always desired, wherever we are. Brinsden shewed me a letter from a person, who is desirous to be your tenant at Bifrons: I suppose he has writ to you upon this subject, and wish it may be a bargain to your satisfaction. Receive my wife's best and kindest compliments, and believe, that no man living is with greater esteem, or truer friendship than

I am,

Your faithful, humble servant,

I shall only add, that my wife is still better than when you saw her, and remarkably so within these eight days.

To Mrs. Mary Taylor.

Dawley, April 24th, 1731.

DEAR SISTER,

I had no opportunity yesterday of acquainting you with my arrival here. The stage-coach loitered so much, that I did not get hither till the middle of dinner. I found with my Lord, Mr. Pope, and another Gentleman; and Mr. Pope was so obliging as to engage me, with my Lord, to dine with him to-morrow. When we were alone, my Lord very kindly inquired of me the situation of my affairs; and, like a true friend, would not be satisfied till I acquiesced in his proposal to take me along with him to town, to consult with his own lawyers, that I may know, with full certainty, the whole nature of the circumstances I am now in: I believe the day will be Monday, my Lord having named it; and the first minute I am at liberty, will come to you. Pray give my

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affectionate respects to my sisters, and accept
of the same most cordially, from

Your obedient servant,

Br. Taylor.

Towards the close of this year, 1731,
Brook Taylor died, and was buried in the
Church-yard of St. Anne's, Soho.

THE END.



